Check List the journal of biodiversity data

LISTS OF SPECIES

Check List 12(2): 1859, 21 March 2016 doi: http://dx.doi.org/10.15560/12.2.1859
ISSN 1809-127X © 2016 Check List and Authors

Checklist of the vascular flora of Reserva Biológica San Luis, Costa Rica

José Esteban Jiménez[1*], **Pedro Juárez**[2] and **Armando Díaz**[2]

1 Programa Regional de Posgrado en Biología, Universidad de Costa Rica, Apdo. 11501–2060, San José, Costa Rica
2 Escuela de Ciencias Ambientales, Universidad Nacional de Costa Rica, Heredia, Costa Rica
* Corresponding author. E-mail: gaiadendron.jej@gmail.com

Abstract: The Reserva Biológica San Luis is a small protected area located on the Pacific side of the Cordillera de Tilarán, northwestern Costa Rica, with a forest transitioning between the basal and premontane floras according to Holdridge's Life Zones. An inventory of the vascular flora of the reserve was performed by collecting botanical samples during three years and consulting the databases of the CR, INB, MO and USJ herbaria. We report 130 families, 477 genera and 716 species of native vascular plants. Angiosperms comprise the largest group with 94.3%, followed by Pteridophytes 5.4% and Lycophytes 0.3%. The best represented life forms are herbaceous and arborescent with 35.7% and 26.8% respectively. Fabaceae and *Piper* are the most diverse family and genus, with 67 and 15 species respectively. Despite occupying 0.000049% of the total area of Costa Rica, this reserve protects approximately 7.3% of the vascular plants of the country.

Key words: floristics; transitional forest; seasonal forest; Cordillera de Tilarán, Costa Rica

INTRODUCTION

Costa Rica is ranked as one of the best known countries in the Neotropics floristically (Grayum et al. 2004). However, there are still many unexplored sites and floristic knowledge gaps in numerical terms (species richness) in many areas of the country. The floristic diversity of an area is usually described as species richness and variety of life forms of plants (Zamora et al. 2004). Numerous floristic surveys (Haber 1991; Kappelle et al. 2000; Chavarría et al. 2001; Jiménez and Grayum 2002; Gómez-Laurito and Ortiz 2004; Trusty et al. 2006; Cascante and Estrada 2012; OET 2014; Aguilar et al. 2014), have contributed to the knowledge of the Costa Rican flora.

One of the most studied regions of the country is the Cordillera de Tilarán, especially the cloud forest vegetation. Located on the Pacific slope of the Cordillera de Tilarán, the Reserva Biologica San Luis (RBSL) is a small protected area that preserves a seasonal and transitional vegetation between the lowland tropical wet forest and premontane wet forest (Holdridge 1967). This vegetation type is usually located between 500–800 m on the Pacific slope of Costa Rican mountain ranges, especially in the seasonal Central Pacific region, the North Pacific region and in the Central Valley.

This vegetation is located on Pacific slope of the Cordillera Volcánica de Guanacaste, Cordillera de Tilarán and the Central Valley; and has only been documented at the El Rodeo region in the Central Valley (includes Zona Protectora El Rodeo) (Cascante and Estrada 2012). The aim of this survey is to document the vascular flora in the Reserva Biologica San Luis (RBSL), Cordillera de Tilarán.

MATERIALS AND METHODS

Study site

The RBSL, created in 1995 by the non-governmental organization Centro Científico Tropical (CCT), is located on the Pacific slope of the Cordillera de Tilarán, specifically in the Monteverde area, Guacimal and Monteverde districts, Puntarenas Province, between coordinates 10°15′15″ N – 10°14′57″ N and 084°49′34″ W – 084°49′20″ W (Figure 1). According to Méndez (2009), the reserve has a total area of 251 ha covered by a continuous block of forest that contains a mosaic of secondary forest, fragments of primary forest and unforested areas (Figure 2).

The RBSL has an elevational range from 540 m near the riverbed of the Guacimal River, to 855 m at the Cerro San Luis. It has a dry season from December to mid-May, an average annual temperature of 22–24°C and an average of 2,500–3,000 mm of annual precipitation. The reserve has mostly entisols soils and is dominated by slopes between 30–60 degrees (Méndez 2009). According to Holdridge (1967), the reserve area should be classified as transitional vegetation between the lowland tropical wet forest and premontane wet forest.

Data collection

The compilation of the vascular plants checklist was performed by collecting plant specimens during 15 field trips (45 days in total) between 2011–2014 and reviewing the database of the CR (MNCR 2014), INB (INBio 2014), MO (Tropicos 2015) and USJ (not available online) herbaria. The collection of botanical specimens was performed in both dry and rainy seasons. Vascular

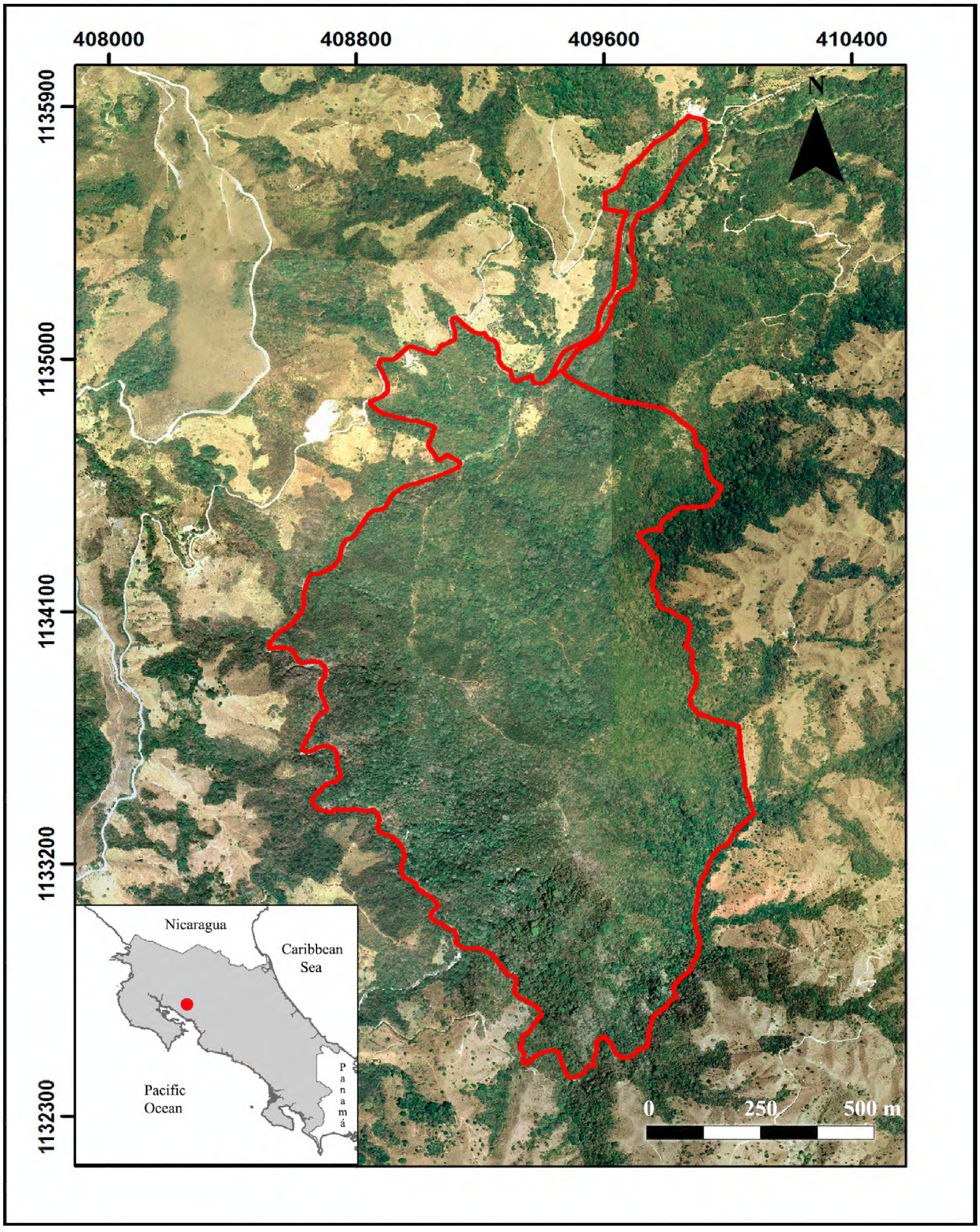

Figure 1. Location of Reserva Biológica San Luis, Cordillera de Tilarán, Costa Rica.

Figure 2. Study area. **A–C**: Overwiew of the RBSL. **D**: No forest area. **E**: Secondary forest. **F**: Primary forest.

plant morphospecies were collected mostly fertile. The specimens were deposited in USJ and CR.

The taxonomic identity of each specimen was determined by: 1) reviewing the latest thorough revision of the Costa Rican seed plant flora (Hammel et al. 2003a, 2003b, 2004, 2010, 2014, 2015), 2) direct comparison with identified specimens from the USJ, CR and INB (INB no longer exists and the collections were donated to CR) and 3) consulting with taxonomist herbarium staff (see acknowledgments). The taxonomic identity of specimens previously collected in the same area was verified.

Data analysis

The checklist is organized alphabetically by family and genus within the categories of Lycophyta, Pteridophyta and Spermatophyta. The taxonomy and nomenclature of spermatophytes follows the classification accepted by the TROPICOS database (Tropicos 2015), which is based on the APG III classification system for angiosperms (APG III 2009), and those of lycophytes and pteridophytes follow the classification of Christenhusz et al. (2011). To update and standardize the taxonomy and nomenclature of species according to APG III (2009), we used the Taxonomic Name Resolution Service v3.2 program (TNRS 2014).

Species were classified according to their life form and habit according to Nivia and Cascante (2008) with few modifications. Life form is classified as Herbaceous (H), Shrubs (S), Vines (V) and Trees (T); and the Habit is classified as Terrestrial (T [including epilithic plants]), Epiphytes (Ep), Hemiepiphytes (Hep) and Aquatic (Aq [including marsh plants]). The modification of the Nivia and Cascante classification was include any suffruticos

herbs in the herbaceous category and any shrub-small trees in the shrubs category. Vines include herbaceous and woody plants.

The following variables were determined: 1) the number of families, genera and species for each of the lycophytes, pteridophytes and spermatophytes (gymnosperms and angiosperms), 2) the most diverse families and genera, 3) the origin of species was placed into five mutually exclusive categories: endemic to Costa Rica (EN), non-endemic to Costa Rica but native to the RBSL(N), introduced and naturalized in Costa Rica (IN), introduced but not naturalized (INN) and native to Costa Rica but introduced to RBSL (NI), 4) the number of species per life form and habit. Analyses of the four variables were made using only those species classified as EN and N.

New records for the Pacific slope of Cordillera de Tilarán are marked with an asterisk (*). The origin of each species and endemicity was obtained from Chacón and Saborio (2006), Hammel et al. (2003a, 2003b, 2004, 2010, 2014, 2015) and SINAC (2007). The collecting effort was determined using the methodology of species accumulation curve for the prediction of species richness (Soberón and Llorente 1993).

RESULTS

The RBSL has a floristic richness of 130 families, 480 genera, and 716 native species of vascular plants (including two subspecies and a hybrid fern not published). Additionally, 33 IN species, six INN species and three NI species were found. These 758 species (N+IN+INN+NI) are determined by 1134 voucher herbarium specimens collected from 1992 to 2014; of these, 1086 specimens were collected in the field during the study period. Each specimen is included in Appendix 1.

Identification of two morphospecies was limited to the generic level by the lack of reproductive characters for species-level determination (see Appendix 1). Thirteen species endemic to Costa Rica and 19 new records for the Pacific slope of the Cordillera de Tilarán were found. A new species, *Mormodes salazarii* M.A. Blanco, J.E. Jiménez & P. Juárez (Blanco et al. 2006), was found as a result of the field work (Figure 3).

Angiosperms comprise the largest group of vascular plants (94.3%), followed by pteridophytes (5.4%) and lycophytes (0.3%) (Table 1). No gymnosperms were found. The herbaceous and arborescent life forms are the most abundant in the reserve with 35.7% and 26.8% of

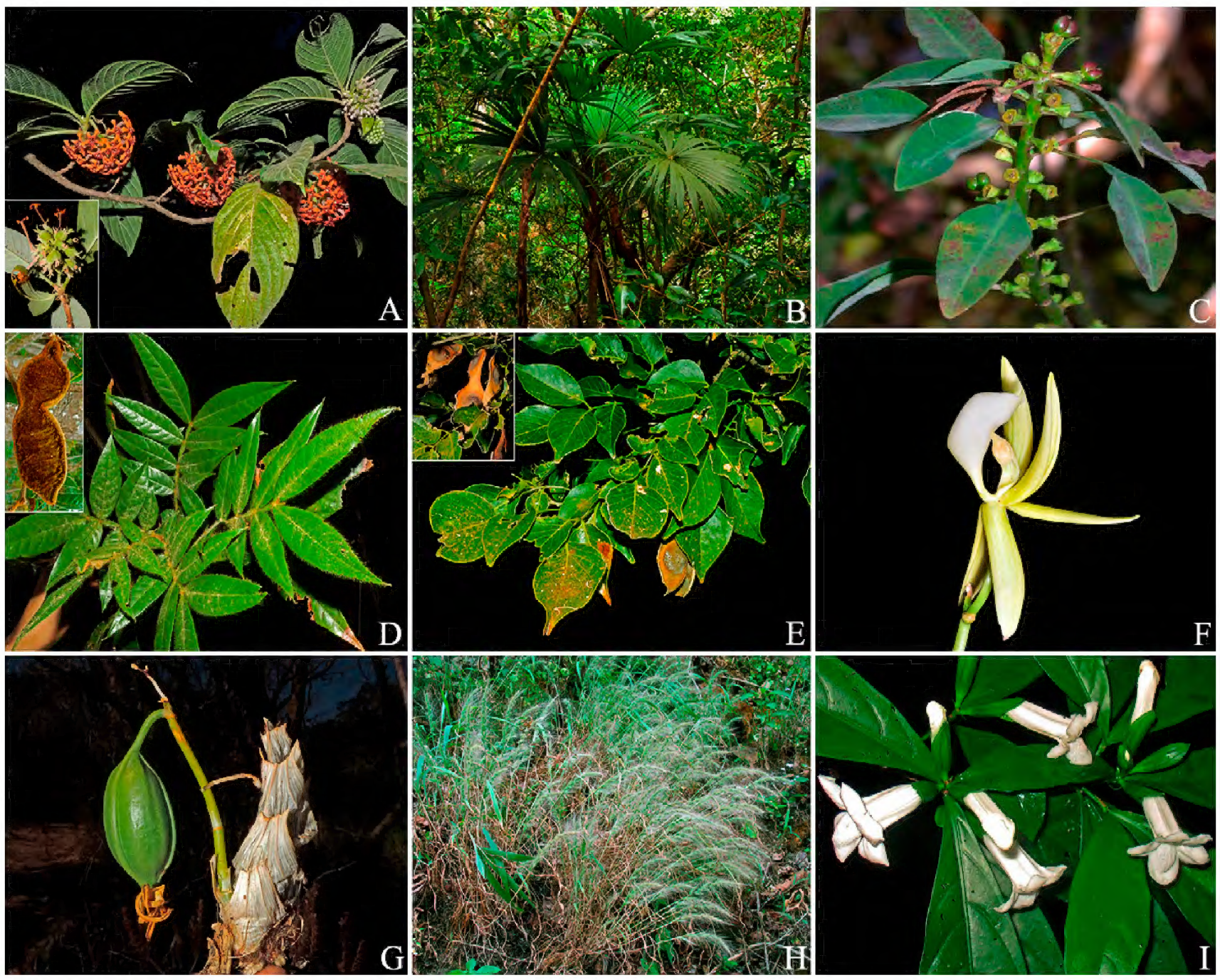

Figure 3. Endemic species found in RBSL. **A**: *Arachnothryx aspera* (Standl.) Borhidi (JEJ 2127, USJ). **B**: *Cryosophila grayumii* R.J. Evans (JAD 27, USJ). **C**: *Euphorbia hoffmanniana* (Klotzsch & Garcke) Boiss. (JEJ 133, USJ). **D**: *Inga herrerae* N.Zamora (JEJ 88, USJ). **E**: *Lonchocarpus haberi* M.Sousa (PJ 534, USJ). **F–G**: *Mormodes salazarii* M.A. Blanco, J.E. Jiménez & P. Juárez (MAB 4749 & JEJ 2263, USJ). **H**: *Muhlenbergia diandra* (R.W. Pohl) Columbus (JEJ 1948, USJ). **I**: *Spathacanthus hoffmannii* Lindau (JEJ 110, USJ).

Table 1. Taxonomic diversity of native vascular plants of RBSL, reported as total number and percentage for each taxonomic category.

Group	Nº families	Nº genera	Nº species
Lycophyta	1 (0.8%)	1 (0.2%)	2 (0.3%)
Pteridophyta	13 (10.0%)	21 (4.4%)	39 (5.4%)
Spermatophyta	116 (89.2)	458 (95.4)	675 (94.3)
Total	**130 (100%)**	**480 (100%)**	**716 (100%)***

* including one species with two subspecies

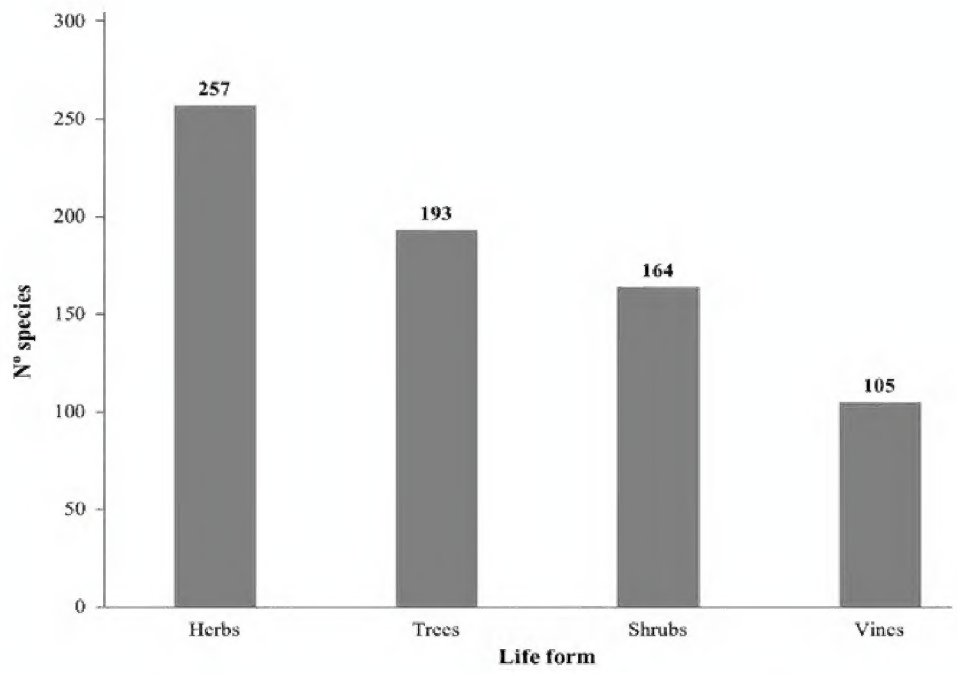

Figure 4. Frequency of different life forms of vascular plants at RBSL.

the species respectively, while shrubs and vines are the least representative with 22.8% and 14.6% respectively (Figure 4). Over 90% of the vascular plants of the reserve have a terrestrial habit, followed by epiphytes (5.7%), hemiepiphytes (1.7%), and aquatics (0.3%).

The most diverse plant families are Fabaceae (67 spp. / 39 gen.), Asteraceae (58 spp. / 41 gen.), Rubiaceae (28 spp. / 20 gen.), Malvaceae (22 spp. / 16 gen.), Poaceae (22 spp. / 17 gen.) and Orchidaceae (21 spp. / 19 gen.). These six families represent 31% of all native species and 32% of the genera (Figure 5). The most diverse genera are *Piper* L. (Linnaeus 1753: 28) with 15 species, *Ipomoea* L. (Linnaeus 1753: 159) with 10 species and *Senna* Mill. (Miller 1754: 3) and *Ficus* L. (Linnaeus 1753: 1059) each with eight species.

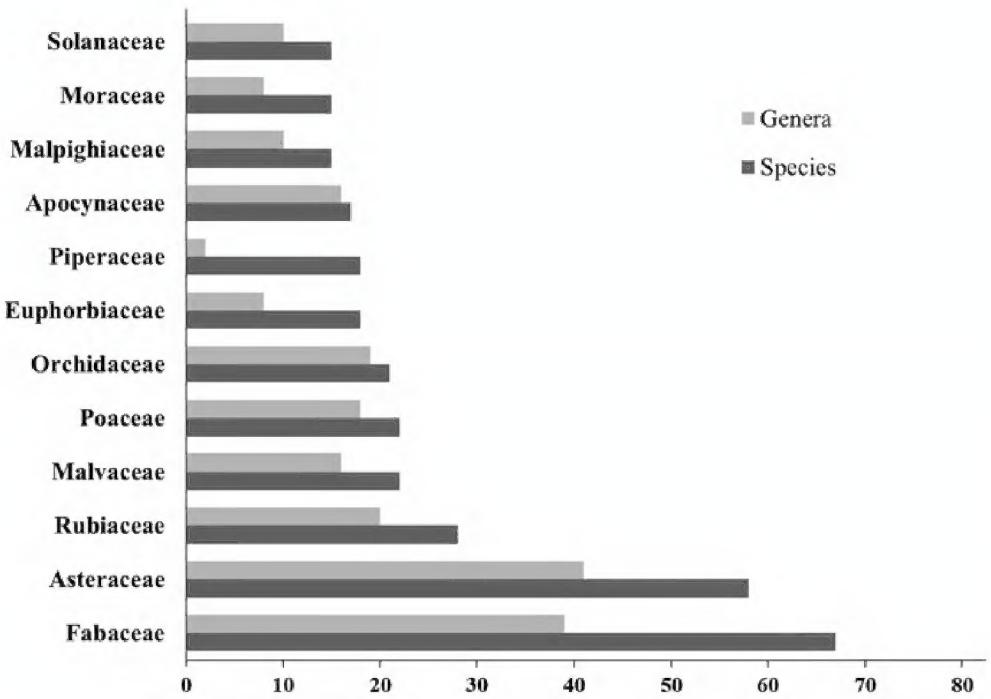

Figure 5. Plant families with the highest number of genera and species in RBSL.

DISCUSSION

The RBSL contains approximately 7.6% (716 spp.) of the vascular plant species of Costa Rica in just 0.000049% of the total area of the country, based on the 9361 species documented by Zamora et al. (2004). The flora of the reserve is somewhat similar to that of the dry forest of the north Pacific region of Costa Rica due to the marked seasonality of the site (Haber 2000).

Compared with other protected areas in Costa Rica, most of which have different environmental conditions and vegetation types, the RBSL contains a notably large number of species, given its relatively small area. The transitional forest of the reserve has a slightly higher diversity than the dry forest of the Palo Verde National Park and Lomas de Barbudal Biological Reserve combined, which has an area 89 times larger (Chavarría et al. 2001), and the montane forest of the Upper Savegre River Basin (Kappelle et al. 2000). However, the transitional forest of RBSL has less diversity than the cloud forest (Gómez-Laurito and Ortiz 2004) or the wet forest of the Pacific and Caribbean watersheds (Jiménez and Grayum 2002, OET 2014) (Table 2). Comparing the RBSL vascular flora with the El Rodeo region, a locality with the same types of vegetation but 13 times larger (3016.9 ha), we found that 513 species occur in both locations (67.7% of RBSL vascular flora, see Appendix 1) (Cascante and Estrada 2012).

The high concentration of species in the small territory of the reserve is influenced directly by its geographic location where floristic elements of low and middle elevations intermingle or overlap (Burger 1995), by the topographic complexity that produces many microhabitats and specific communities (Méndez 2009) and by the various successional stages of the vegetation. Furthermore, the high number of species found is supported by the species accumulation curve (Figure 6), that shows a high collecting effort and suggests that the richeness obtained in this study is close to reality.

The number of EN species found (13 spp.) is extremely low compared with the total number of plants endemic to Costa Rica (900–1000) of which 300 are found in the adjacent Monteverde area (Zamora et al. 2004; SINAC 2007), probably above 900 m. The number of species according to life form and habit is consistent with the national numbers registered for these variables. In Costa Rica, herbs comprise the most common life form, followed by trees, shrubs and vines; terrestrial plants is the most common habit, followed by epiphytes,

Table 2. Richness of vascular plants recorded in floristic inventories carried out in Costa Rica. All studies include introduced and naturalized species. Gómez-Laurito and Ortiz (2004) recorded only angiosperms.

Locality	Area (ha)	Vegetation type[1]	Richness
Upper Savegre River Basin (Kappelle et al. 2000)	10000	Montane Forest	626
La Selva Biological Station (OET 2014)	1614	Tropical Wet Forest	2077
Carara National Park (Jiménez and Grayum 2002)	5242	Tropical Wet Forest	1166
Cocos Island National Park (Trusty et al. 2006)	2400	Tropical Wet Forest	263
Palo Verde National Park and Lomas Barbudal Biological Reserve (Chavarría et al. 2001)	22445.7	Dry forest	696
Alberto Manuel Brenes Biological Reserve (Gómez-Laurito and Ortiz 2004)	400	Cloud Forest of Caribbean Slope	1294
San Luis Biological Reserve	251	Transitional between tropical wet forest and premontane wet forest	758
El Rodeo region (Cascante and Estrada 2012)	3267.9	Transitional between tropical wet forest and premontane wet forest	1034

[1] According to Holdridge's Life Zones

hemiepiphytes and aquatic plants (Zamora et al. 2004; Nivia and Cascante 2008).

The low concentration of epiphytes in RBSL (5.7% of the total) is not consistent with the high diversity of this group of plants in Costa Rica (~28%) (Nivia and Cascante 2008). The location of the reserve on the Pacific slope of the Tilarán range, characterized by marked rainfall seasonality (Zamora *et al*. 2004), may explain this low diversity of epiphytes. According to Gentry and Dodson (1987), the rainfall seasonality and consequent low relative humidity are the main causes of low epiphyte diversity. We believe that this is the reason that few species of Orchidaceae were recorded, even though they represent the most diverse family of vascular plants of Costa Rica (Zamora et al. 2004).

Fabaceae is the most diverse plant family in RBSL with 9.4% of the vascular flora of the reserve, and 11.3% of the species found in Costa Rica. This family is also the most diverse in protected areas located in zones with marked seasonality, such as Carara National Park (79 spp.), Palo Verde National Park, Lomas de Barbudal Biological Reserve (123 spp.) and El Rodeo region (97 spp.) (Chavarria et al. 2001; Jiménez and Grayum 2002; Cascante and Estrada 2012). The most diverse genus in RBSL (*Piper*) is also the most represented in Carara National Park (23 spp.), La Selva Biological Station (55 spp.), and El Rodeo region (20 spp.) (Jiménez and Grayum 2002; Cascante and Estrada 2012; OTS 2014).

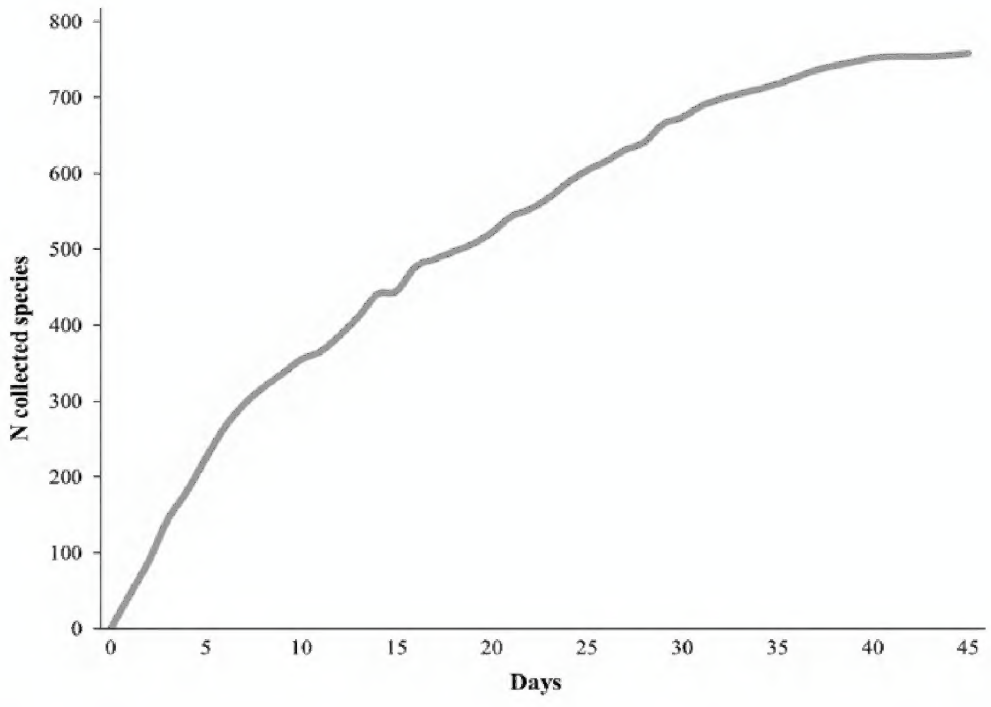

Figure 6. Species accumulation curve showing the collecting effort made in the reserve between 2011–2014.

ACKNOWLEDGEMENTS

We thank the Centro Científico Tropical (CCT), the NGO responsible for the RBSL, for persmission to carry out this research in the reserve and for logistical and financial support. Thanks to Alejandro Retana, Damián Sánchez, Francesca Protti, Fabiola Barquero, Christian Zúñiga, Roberto Rodriguez, William Montero, Daniel Barrios, Christian Mena and Gabriel Barboza for their valuable assistance in the fieldwork. Rafael Acuña (USJ), Mario Blanco (JBL, USJ), Miguel Chaves (HLDG), Armando Estrada (CR), Jorge Gómez-Laurito (USJ), José Gonzalez (LSCR), Barry Hammel (MO), Quírico Jiménez, Silvia Lobo (CR), J. Francisco Morales (UBT), Luis Poveda (JVR), Armando Ruíz (CR), Joaquín Sánchez (CR), Daniel Santamaria (HUH), Alexander Rojas and Nelson Zamora (INB), for their support in taxonomic identification or confirmation of some species. Mario Blanco and Alfredo Cascante provided useful comments on an early version of this manuscript. Two anonymous reviewers improved the quality of the paper.

LITERATURE CITED

Aguilar, R., X. Cornejo, C. Bainbridge, M. Tulig and S.A. Mori. 2014. Plantas vasculares de la Península de Osa, Costa Rica. Accessed at http://sweetgum.nybg.org/osa, May 2014.

APG III (Angiosperm Phylogeny Group III). 2009. An update of the Angiosperm Phylogeny Group classification for the orders and families of flowering plants: APG III. Botanical Journal of the Linnean Society 161: 105–121. doi: 10.1111/j.1095-8339.2009.00996.x

Blanco, M.A., J.E. Jiménez and P. Juárez. 2016. *Mormodes salazarii* (Orchidaceae), a new species with greenish-white flowers from Costa Rica. Phytotaxa 245(2): 161–168. doi: 10.11646/phytotaxa.245.2.7

Bohs, L. 2015. Solanaceae; pp. 205–336, in: B.E. Hammel, M.H. Grayum, C. Herrera and N. Zamora (eds.). Manual de plantas de Costa Rica. Vol. VIII. Monographs in Systematic Botany from the Missouri Botanical Garden.

Burger, W. 1995. Montane species-limits in Costa Rica and evidence for local speciation on altitudinal gradient, pp. 127–133, in: S.P. Churchill, H. Balslev, E. Forero and J.L. Luteyn (eds.). Biodiversity and conservation of Neotropical montane forest. New York: New York Botical Garden.

Cascante, A. and A. Estrada. 2012. Las plantas vasculares de El Rodeo. Brenesia 77: 71–128.

Chacón, E. and G. Saborío. 2006. Análisis taxonómico de las especies de plantas introducidas en Costa Rica. Lankesteriana 6: 139–147. doi: 10.15517/lank.vi.7959

Chavarría, U., J. González and N. Zamora. 2001. Árboles comunes del Parque Nacional Palo Verde. Santo Domingo de Heredia: Editorial INBio. 216 pp.

Christenhusz, M.J.M., X. Zhang and H. Schneider. 2011. A linear sequence of extant families and genera of lycophytes and ferns. Phytotaxa 19: 7–54. Accessed http://mapress.com/phytotaxa/content/2011/f/pt00019p054.pdf

Gentry, A.W. and C.H. Dodson. 1987. Diversity and biogeography of Neotropical vascular epiphytes. Annals of the Missouri Botanical Garden 74: 205–233.

Gómez-Laurito, J. and R. Ortiz. 2004. Lista con anotaciones de las angiospermas de la Reserva Biológica Alberto Manuel Brenes (Microcuencas de los ríos San Lorenzo y San Lorencito), Costa Rica. Lankesteriana 4: 113–142.

Grayum, M.H., B.E. Hammel, S. Troyo and N. Zamora. 2004. Historia: La exploración botánica y la florística en Costa Rica; pp. 1–48, in: B.E. Hammel, M.H. Grayum, C. Herrera and N. Zamora. (eds.). Manual de plantas de Costa Rica. Vol. I. Monographs in Systematic Botany from the Missouri Botanical Garden.

Haber, W.A. 1991. Lista provisional de las plantas de Monteverde, Costa Rica. Brenesia 34: 63–120.

Haber, W.A. 2000. Plants and vegetation; pp. 39–70: in: N.M. Nadkarni and N.T. Wheelwright (eds.). Monteverde: ecology and conservation of a tropical cloud forest. Oxford University Press. New York, USA.

Haber, W.A., W. Zuchowski and E. Bello. 2000. An introduction to cloud forest trees: Monteverde, Costa Rica, 2nd ed. Monteverde: Mountain Gem Publisher. 202 pp.

Hammel, B.E., M.H. Grayum, C. Herrera and N. Zamora (eds.). 2003a. Manual de plantas de Costa Rica. Monocotiledóneas (Agavaceae-Musaceae). Vol. II. Monographs in Systematic Botany from the Missouri Botanical Garden 92: 1–694.

Hammel, B.E., M.H. Grayum, C. Herrera and N. Zamora (eds.). 2003b. Manual de plantas de Costa Rica. Monocotiledóneas (Orchidaceae-Zingiberaceae). Vol. III. Monographs in Systematic Botany from the Missouri Botanical Garden 93: 1–884.

Hammel, B.E., M.H. Grayum, C. Herrera and N. Zamora (eds.). 2004. Manual de plantas de Costa Rica. Dicotiledóneas (Halogaraceae-Phytolaccaceae). Vol. VI. Monographs in Systematic Botany from the Missouri Botanical Garden 97: 1–933.

Hammel, B.E., M.H. Grayum, C. Herrera and N. Zamora (eds.). 2010. Manual de plantas de Costa Rica. Dicotiledóneas (Clusiaceae-Gunneraceae). Vol. V. Monographs in Systematic Botany from the Missouri Botanical Garden 119: 1–970.

Hammel, B.E., M.H. Grayum, C. Herrera and N. Zamora (eds.). 2014. Manual de plantas de Costa Rica. Dicotiledóneas (Picramnaceae-Rutaceae). Vol. VII. Monographs in Systematic Botany from the Missouri Botanical Garden 129: 1–840.

Hammel, B.E., M.H. Grayum, C. Herrera and N. Zamora (eds.). 2015. Manual de Plantas de Costa Rica. Dicotiledóneas (Sabiaceae-Zygophyllaceae). Vol. VIII. Monographs in Systematic Botany from the Missouri Botanical Garden 131: 1–657.

Holdridge, L. 1967. Life zone ecology. San José, CR: Tropical Science Center. 206 pp.

INBio (Instituto Nacional de Biodiversidad). 2014. Base de datos ATTA. Accessed at http://atta.inbio.ac.cr/, May 2014.

Jiménez, Q. and M. Grayum. 2002. Vegetación del Parque Nacional Carara. Brenesia 57–58: 25–66.

Kappelle, M., L. Omme and M. Juárez. 2000. Lista de la flora vascular de la cuenca superior del Río Savegre, San Gerardo de Dota, Costa Rica. Acta Botánica Mexicana 51: 1–38. Accessedhttp://redalyc.org/articulo.oa?id=57405101

Linnaeus, C. 1753. Species plantarum: exhibentes plantas rite cognitas, ad genera relatas, cum differentiis specificis, nominibus trivialibus, synonymis selectis, locis natalibus, secundum systema sexuale digestas. Stockholm. Impensis Laurentii Salvii, Holmiæ. 1200 pp. doi: 10.5962/bhl.title.669

Tropicos. 2015. Missouri Botanical Garden. Accessed at http://www.tropicos.org, May 2015.

Méndez, Y. 2009. Plan de manejo de la Estación Biológica San Luis, Monteverde, Costa Rica. M. Sc. dissertation. San José: Universidad para la Cooperación Internacional. 85 pp.

Miller, P. 1754. The gardeners dictionary. Containing the methods of cultivating and improving all sortsof trees, plants, and flowers, for the kitchen, fruit, and pleasure gardens; as also those which are used in medicine. With directions for the culture of vineyards, and making wine in England. In which likewise are included the practical parts of husbandry. Abridged from the last folio edition, by the author, Philip Miller, in three volumes The fourth edition, corrected and enlarged. London: printed for the author; and sold by John and James Rivington. doi: 10.5962/bhl.title.79061

MNCR (Museo Nacional de Costa Rica). 2014. Base de datos ECOBIOSIS del Departamento de Historia Natural de Costa Rica. Accessed at http://ecobiosis.museocostarica.go.cr, May 2014.

Nivia, A. and A. Cascante. 2008. Distribución de las formas de vida en la flora costarricense. Brenesia 69: 1–17.

OET (Organización para Estudios Tropicales). 2014. Lista de plantas vasculares de la Estacion Biologica La Selva, Sarapiquí, Costa Rica. Accessed at http://sura.ots.ac.cr/local/florula4/docs/Lista_species_flora_sep07.pdf, May 2014.

SINAC (Sistema Nacional de Áreas de Conservación). 2007. GRÚAS II: Análisis de vacíos en la representatividad e integridad de la biodiversidad terrestre, Vol. 1, 1 ed. San José: SINAC-MINAE. 100 pp.

Soberón, J. and J. Llorente. 1993. The use of species accumulation functions for the prediction of species richness. Conservation Biology 7: 480–488. http://www.jstor.org/stable/2386676

TNRS (Taxonomic Name Resolution Service). 2014. iPlant Collaborative. Version 3.2. Accessed at http://tnrs.iplantcollaborative.org, May 2014.

Trusty, J.L., H.C. Kesler and G.H. Delgado. 2006. Vascular flora of Isla del Coco, Costa Rica. Proceedings of the California Academy of Sciences 57: 247–355

Zamora, N., B.E. Hammel and M.H. Grayum. 2004. Vegetación; pp. 91–216, in: B.E. Hammel, M.H. Grayum, C. Herrera and N. Zamora. (eds.). Manual de plantas de Costa Rica. Vol. I. Monographs in Systematic Botany from the Missouri Botanical Garden.

Author contributions: JEJ, PJ and JAD collected the data and identified specimens, JEJ and PJ wrote the text, and JEJ made the analysis.

Received: 27 April 2015
Accepted: 14 January 2016
Academic editor: Rubens Luiz Coelho

Appendix

Table A1. Vascular plants of the Reserva Biológica San Luis. This table shows the Life form (H= Herbaceous, S= Shrub, V=Vine, T= Tree), Habit (T= terrestrial, Ep= Epiphytic, Hep= hemiepiphytic, Aq= aquatic), voucher collectors (EB= Erick Bello, JAD= José Armando Díaz, JEJ= José Esteban Jiménez, MAB= Mario Alberto Blanco, PJ= Pedro Juárez, WH= William Haber, WM= William Montero, ZF= Zobedia Fuentes) and the species shared with the El Rodeo region. *New record for the Pacific slope of Cordillera de Tilarán, [E] endemic to Costa Rica, [IN] introduced and naturalized, [INN] introduced not naturalized, [NI] native of Costa Rica but introduced in RBSL, species with no mark are native to the reserve.

Taxa	Life form / Habit	Voucher(s)	Shared with El Rodeo region
LYCOPHYTA (2 species, all native)			
Selaginellaceae			
Selaginella horizontalis (C. Presl) Spring	H/T	PJ 473 (USJ)	
Selaginella pallescens (C. Presl) Spring	H/T	JEJ 245 (CR)	x
PTERIDOPHYTA (39 species, all native)			
Anemiaceae			
Anemia hirsuta (L.) Sw.	H/T	JEJ 2173 (USJ)	x
Anemia oblongifolia (Cav.) Sw.	H/T	JEJ 2032 (USJ)	x
Anemia phyllitidis (L.) Sw.	H/T	JEJ 239 (CR)	x
Aspleniaceae			
Asplenium formosum Willd.	H/E or T	PJ 484 (USJ), PJ 608 (USJ)	x
Asplenium pumilum Sw.	H/T	PJ 483 (USJ)	
Blechnaceae			
Blechnum appendiculatum Willd.	H/T	JAD 176 (CR)	
Blechnum flaccisquama A. Rojas	H/T	JAD 139 (CR), JEJ 2165 (USJ)	
Blechnum flaccisquama x occidentale (*sensu* A. rojas pers. comm.)	H/T	JEJ 1961 (USJ)	
Blechnum occidentale L.	H/T	PJ 474 (USJ), PJ 524 (USJ)	x
Blechnum polypodioides Raddi	H/T	JEJ 2163 (USJ)	
Cyatheaceae			
Alsophila firma (Baker) D.S. Conant	T/T	JEJ 2801 (USJ)	x
Davalliaceae			
Nephrolepis brownii (Desv.) Hovenkamp & Miyam.*	H/T	PJ 508 (USJ)	
Dennstaedtiaceae			
Pteridium caudatum (L.) Maxon	H/T	PJ 564 (USJ), PJ 623 (USJ)	
Dryopteridaceae			
Bolbitis portoricensis (Spreng.) Hennipman	H/T	JEJ 427 (CR), JEJ 2164 (USJ)	x
Dryopteris patula (Sw.) Underw.	H/Ep or T	JEJ 2024 (USJ), PJ 525 (USJ)	
Oleandraceae			
Oleandra decurrens Maxon	H/Ep	JEJ 2162 (USJ)	
Polypodiaceae			
Campyloneurum gracile A. Rojas	H/Ep	PJ 475 (USJ), PJ 518 (USJ)	x
Pecluma alfredii (Rosenst.) M.G. Price	H/Ep	PJ 509 (USJ)	
Polypodium colpodes Kunze	H/Ep	PJ 506 (USJ)	
Polypodium furfuraceum Schltdl. & Cham.	H/Ep	JEJ 242 (CR)	
Polypodium polypodioides (L.) Watt	H/Ep	JEJ 241 (CR)	x
Serpocaulon attenuatum (C. Presl) A.R. Sm.	H/Ep	PJ 471 (USJ)	
Serpocaulon triseriale (Sw.) A.R. Sm.	H/Ep	PJ 487 (USJ)	
Pteridaceae			
Adiantum amplum C. Presl.	H/T	JEJ 432 (CR)	
Adiantum concinnum Humb. & Bonpl. ex Willd.	H/T	JEJ 425 (CR)	x
Adiantum patens Willd.	H/T	JAD 189 (CR), JEJ 243 (CR), JEJ 1975 (USJ)	x
Adiantum terminatum Kunze ex Miq.	H/T	JEJ 424 (CR)	
Adiantum trapeziforme L.	H/T	JEJ 429 (CR)	x
Hemionitis palmata L.	H/T	PJ 488 USJ)	x
Pityrogramma calomelanos (L.) Link	H/T	JEJ 430 (CR)	x
Pityrogramma dealbata (C. Presl) Domin	H/T	PJ 563 (USJ)	x
Pteris altissima Poir.	H/T	JEJ 431 (CR)	x
Pteris quadriaurita Retz.	H/T	JEJ 426 (CR)	x
Tectariaceae			
Tectaria mexicana (Fée) C.V. Morton	H/T	PJ 459 (USJ), JEJ 428 (CR)	x
Thelypteridaceae			
Macrothelypteris torresiana (Gaudich.) Ching	H/T	PJ 501 (USJ), JAD 177 (CR)	x
Thelypteris dentata (Forssk.) E.P. St. John	H/T	JEJ 433 (CR)	x
Thelypteris glandulifera C. F. Reed	H/T	JEJ 244 (CR)	

Continued

Table A1. *Continued.*

Taxa	Life form / Habit	Voucher(s)	Shared with El Rodeo region
Thelypteris patens (Sw.) Small	H/T	PJ 514 (USJ)	x
Woodsiaceae			
Athyrium skinneri (Baker) Diels	H/T	JEJ 240 (CR), JEJ 1986 (USJ), PJ 467 (USJ)	
SPERMATOPHYTA			
ANGIOSPERMAE (717 species, 675 native)			
Acanthaceae			
Aphelandra scabra (Vahl) Sm.	S/T	JAD 26 (USJ), PJ 477 (USJ)	x
Aphelandra tridentata Hemsl.	S/T	JAD 213 (USJ)	
Barleria oenotheroides Dum. Cours.	H/T	JEJ 146 (USJ), JAD 328 (USJ)	x
Blechum pyramidatum (Lam.) Urb.	H/T	JEJ 347 (CR), JEJ 2240 (USJ)	
Bravaisia integerrima (Spreng.) Standl.	T/T	JAD 132 (CR), JEJ 1971 (USJ)	x
Dicliptera unguiculata Nees	H/T	JAD 144 (CR)	
Dyschoriste quadrangularis (Oerst.) Kuntze	H/T	PJ 615 (USJ)	
Elytraria imbricata (Vahl) Pers.	H/T	JEJ 399 (CR)	
Hypoestes phyllostachya Baker [IN]	H/T	JEJ 453 (CR), PJ 546 (USJ)	
Justicia arborescens Durkee & McDade	S/T	PJ 460 (USJ), JAD 220 (USJ), WH 9668 (CR,MO)	
Pseuderanthemum cuspidatum (Nees) Radlk.	H/T	JEJ 215 (CR), JAD 222 (USJ)	x
Ruellia inundata Kunth	S/T	JEJ 378 (CR)	x
Spathacanthus hoffmannii Lindau [E]	S/T	JEJ 110 (USJ)	x
Thunbergia fragrans Roxb. [IN]	V/T	JEJ 1935 (USJ)	x
Agavaceae			
Furcraea cabuya Trel.	H/T	JEJ 127 (USJ), PJ 499 (USJ)	
Yucca guatemalensis Baker [INN]	S/T	JEJ 2094 (USJ)	x
Alstroemeriaceae			
Bomarea edulis (Tussac) Herb.	V/T	JEJ 214 (CR)	x
Amaranthaceae			
Achyranthes aspera L.	H/T	JAD 143 (CR), JEJ 451 (CR), JAD 207 (USJ)	x
Alternanthera laguroides (Standl.) Standl.	S/T	JEJ 95 (INB)	x
Amaranthus hybridus L.	H/T	JEJ 2273 (USJ)	
Amaranthus spinosus L.	H/T	JAD 103 (USJ)	x
Chamissoa altissima (Jacq.) Kunth	V/T	JEJ 2261 (USJ)	x
Cyathula prostrata (L.) Blume	H/T	JEJ 257 (CR)	x
Hebanthe grandiflora (Hook.) Borsch & Pedersen	S/T	JEJ 351 (CR), JAD 260 (USJ), PJ 490 (USJ)	x
Iresine diffusa Humb. & Bonpl. ex Willd.	H/T	JAD 353 (USJ)	x
Iresine latifolia (M. Martens & Galeotti) Benth. & Hook. f.	S/T	JAD 44 (USJ), JEJ 1937 (USJ), JEJ 2249 (USJ)	
Pleuropetalum pleiogynum (Kuntze) Standl.	S/T	JEJ 256 (CR), JAD 269 (USJ), PJ 468 (USJ), PJ 639 (USJ)	
Anacardiaceae			
Anacardium excelsum (Kunth) Skeels	T/T	JEJ 178 (USJ)	x
Astronium graveolens Jacq.	T/T	PJ 656 (USJ)	x
Mangifera indica L. [IN]	T/T	JAD 350 (USJ)	x
Mauria heterophylla Kunth	T/T	JAD 301 (USJ)	x
Spondias purpurea L. [NI]	T/T	JAD 331 (USJ)	x
Spondias radlkoferi Donn. Sm.*	T/T	PJ 493 (USJ)	x
Tapirira mexicana Marchand	T/T	JAD 201 (USJ)	x
Annonaceae			
Annona muricata L. [INN]	T/T	JAD 319 (USJ)	
Annona pruinosa G.E. Schatz	T/T	JEJ 197 (CR), JEJ 198 (CR), JEJ 1941 (USJ)	
Desmopsis bibracteata (B.L.Rob.) Saff.	S/T	JAD 160 (CR), JAD 305 (USJ)	x
Apiaceae			
Cyclospermum leptophyllum (Pers.) Sprague ex Britton & P. Wilson	H/T	JEJ 1984 (USJ)	x
Eryngium carlinae F. Delaroche	H/T	JEJ 2241 (USJ)	
Eryngium foetidum L.	H/T	PJ 552 (USJ)	
Hydrocotyle bowlesioides Mathias & Constance [E]	H/T	JEJ 271 (CR)	
Hydrocotyle leucocephala Cham. & Schltdl.	H/T	JAD 299 (USJ)	
Hydrocotyle umbellata L.	H/T	JEJ 437 (CR)	
Apocynaceae			
Asclepias curassavica L.	H/T	JAD 43 (USJ)	x
Blepharodon mucronatum (Schltdl.) Decne.	V/T	JEJ 2239 (USJ)	x
Catharanthus roseus (L.) G. Don	H/T	JAD 332 (USJ)	
Cynanchum racemosum (Jacq.) Jacq.	V/T	JEJ 237 (USJ)	

Continued

Table A1. *Continued.*

Taxa	Life form / Habit	Voucher(s)	Shared with El Rodeo region
Forsteronia myriantha Donn.Sm.	V/T	JEJ 2236 (USJ)	x
Gonolobus edulis Hemsl.	V/T	JEJ 203 (CR)	x
Macroscepis hirsuta (Vahl) Schltr.	V/T	JEJ 410 (CR)	x
Mandevilla subsagittata (Ruiz & Pav.) Woodson	V/T	JEJ 105 (INB)	x
Marsdenia engleriana Rothe	V/T	JAD 196 (USJ), JEJ 1977 (USJ)	
Matelea haberii W.D. Stevens	V/T	PJ 554 (USJ)	x
Peltastes isthmicus Woodson	V/T	JEJ 111 (USJ), PJ 641 (USJ)	x
Plumeria rubra L.	T/T	JEJ 94 (INB)	x
Prestonia portobellensis (Beurl.) Woodson	V/T	JEJ 2233 (USJ)	
Rauvolfia litoralis Rusby.	T/T	JEJ 2235 (USJ)	x
Tabernaemontana donnell-smithii Rose	T/T	PJ 535 (USJ)	x
Tabernaemontana pubescens Benth.	S/T	JAD 117 (USJ)	
Tonduzia stenophylla (Donn. Sm.) Pittier	T/T	JEJ 132 (USJ), PJ 636 (USJ)	x
Aquifoliaceae			
Ilex haberi (Lundell) W.J. Hahn	T/T	JEJ 97 (INB), PJ 633 (USJ)	
Araceae			
Anthurium cubense Engl.	H/E or T	PJ 496 (USJ)	
Anthurium flexile Schott	H/Hep	JAD 51 (USJ), JAD 309 (USJ)	
Dieffenbachia oerstedii Schott	H/T	EB 42 (CR,MO)	x
Monstera adansonii Schott	H/Hep	JAD 55 (USJ), JAD 258 (USJ), PJ 497 (USJ)	x
Philodendron anisotomum Schott	H/Hep	PJ 627 (USJ)	x
Philodendron inaequilaterum Liebm.	H/Hep	JAD 232 (USJ)	x
Philodendron jacquinii Schott	H/Hep	JAD 279 (USJ), EB 20 (CR,MO)	x
Spathiphyllum phryniifolium Schott	H/T	PJ 665 (USJ), JEJ 2260 (USJ)	x
Xanthosoma mexicanum Liebm.	H/T	JEJ 2232 (USJ)	x
Xanthosoma wendlandii (Schottt) Schott	H/T	EB 100 (CR,MO), JEJ 1773 (USJ)	x
Araliaceae			
Dendropanax arboreus (L.) Decne. & Planch.	T/T	JEJ 2177 (USJ)	x
Arecaceae			
Acrocomia aculeata (Jacq.) Lodd. Ex Mart.	T/T	JEJ 2443 (USJ)	x
Chamaedorea costaricana Oerst.	S/T	JAD 249 (USJ)	x
Cryosophila grayumii R.J. Evans [E]	S/T	JAD 27 (USJ), JEJ 171 (USJ)	
Aristolochiaceae			
Aristolochia maxima Jacq.	V/T	JAD 87 (USJ), JEJ 2251 (USJ), JEJ 2275 (USJ)	x
Aristolochia pilosa Kunth	V/T	JEJ 1991 (USJ)	x
Asteraceae			
Acmella radicans (Jacq.) R.K. Jansen	H/T	JEJ 377 (CR), JAD 231 (USJ)	x
Ageratum corymbosum Zuccagni	H/T	JEJ 370 (CR)	x
Ageratum petiolatum (Hook. & Arn.) Hemsl.	H/T	PJ 469 (USJ), JEJ 372 (CR), JEJ 1953 (USJ)	
Baccharis pedunculata (Mill.) Cabrera	S/T	JEJ 219 (CR)	x
Baccharis trinervis (Lam.) Pers.	S/T	JAD 123 (USJ)	x
Baltimora recta L.	H/T	JEJ 236 (CR)	x
Bidens pilosa L.	H/T	JAD 50 (USJ)	x
Bidens squarrosa Kunth	V/T	JEJ 278 (CR), JEJ 1919 (USJ), JAD 227 (USJ), JEJ 2247 (USJ)	x
Calea prunifolia Kunth	S/T	JEJ 2145 (USJ)	x
Calea ternifolia Kunth	S/T	JEJ 221 (CR), JEJ 2007 (USJ), JEJ 2144 (USJ)	
Calea urticifolia (Mill.) DC.	S/T	JAD 185 (CR), JEJ 2154 (USJ)	x
Chaptalia nutans (L.) Polák	H/T	JEJ 121 (USJ)	x
Chromolaena collina (DC.) R.M. King & H. Rob.	S/T	JEJ 419 (CR), JEJ 1929 (USJ), PJ 618 (USJ)	x
Chromolaena odorata (Lam.) R.M. King & H. Rob.	S/T	WH 12062 (CR,MO), JAD 186 (CR)	x
Clibadium eggersii Hieron.	S/T	JEJ 2182 (USJ)	
Clibadium surinamense L.	S/T	JEJ 348 (CR)	x
Conyza bonariensis (L.) Cronquist	H/T	JAD 29 (USJ), JEJ 2015 (USJ)	x
Conyza canadensis (L.) Cronquist	H/T	JAD 233 (USJ)	
Conyza laevigata (Rich.) Pruski	H/T	JEJ 1989 (USJ), JAD 287 (USJ)	
Crassocephalum crepidioides (Benth.) S. Moore [IN]	H/T	JAD 298 (USJ)	x
Critonia daleoides D.C.	S/T	JEJ 389 (CR), PJ 538 (USJ)	
Critonia morifolia (Mill.) R.M.King & H.Rob.	S/T	JEJ 199 (CR)	x
Critoniopsis triflosculosa (Kunth) H. Rob.	T/T	JEJ 2183 (USJ)	x
Delilia biflora (L.) Kuntze	H/T	JEJ 401 (CR)	

Continued

Table A1. *Continued.*

Taxa	Life form / Habit	Voucher(s)	Shared with El Rodeo region
Dyssodia montana (Benth.) A.Gray	H/T	JEJ 218 (CR), PJ 549 (USJ)	x
Eclipta prostrata (L.) L.	H/T	WH 11196 (INB,MO)	x
Eirmocephala brachiata (Benth.) H. Rob.	S/T	JEJ 143 (USJ)	x
Elephantopus mollis Kunth	H/T	JEJ 101 (INB)	x
Emilia fosbergii Nicolson [IN]	H/T	JAD 91 (USJ)	x
Fleischmannia microstemon (Cass.) R.M. King & H. Rob.	H/T	JEJ 384 (CR), JEJ 2000 (USJ)	x
Fleischmannia pycnocephala (Less.) R.M. King & H. Rob.	H/T	JAD 32 (USJ), JAD 166 (CR)	x
Gamochaeta americana (Mill.) Wedd [IN]	H/T	JEJ 2242 (USJ)	x
Gnaphalium attenuatum DC.	H/T	JEJ 1911 (USJ)	x
Lasianthaea fruticosa (L.) K.M. Becker	S/T	JAD 95 (USJ), JAD 175 (CR)	x
Lepidaploa tortuosa (L.) H. Rob.	S/T	JEJ 144 (USJ)	x
Melampodium divaricatum (Rich.) DC.	H/T	JAD 31 (USJ)	x
Melanthera nivea (L.) Small	S/T	JEJ 268 (CR)	x
Mikania micrantha Kunth	V/T	JAD 181 (CR), JEJ 277 (CR), JAD 224 (USJ), PJ 516 (USJ)	x
Milleria quinqueflora L.	H/T	PJ 539 (USJ), EB 88 (CR,MO)	x
Montanoa guatemalensis B.L.Rob. & Greenm.	T/T	JAD 296 (USJ)	x
Montanoa tomentosa Cerv.	S/T	JEJ 373 (CR), PJ 463 (USJ), JAD 270 (USJ)	x
Neurolaena lobata (L.) R.Br. ex Cass.	S/T	PJ 634 (USJ)	
Onoseris onoseroides (Kunth) B.L. Rob.	S/T	JEJ 1771 (USJ)	x
Pluchea carolinensis (Jacq.) G. Don	S/T	JEJ 1957 (USJ), JEJ 2262 (USJ)	
Podachaenium eminens (Lag.) Sch. Bip.	S/T	JEJ 100 (INB), JEJ 2258 (USJ), JEJ 2272 (USJ)	
Pseudelephantopus spicatus (Juss. ex Aubl.) C.F. Baker	H/T	JAD 96 (USJ)	x
Sonchus oleraceus (L.) L. [IN]	H/T	PJ 566 (USJ), JEJ 269 (CR)	x
Synedrella nodiflora (L.) Gaertn.	H/T	JEJ 234 (CR), JEJ 2155 (USJ), JAD 215 (USJ), PJ 492 (USJ)	x
Tagetes filifolia Lag.	H/T	JEJ 253 (CR)	
Tagetes tenuifolia Cav.	H/T	JAD 82 (USJ), JEJ 1916 (USJ)	x
Tessaria integrifolia Ruiz & Pav.	S/T	JEJ 1777 (USJ)	x
Tithonia rotundifolia (Mill.) S.F. Blake	S/T	JEJ 205 (CR)	x
Tridax procumbens (L.) L.	H/T	JAD 92 (USJ)	x
Verbesina gigantea Jacq.	S/T	JEJ 216 (CR), JEJ 422 (CR), JEJ 1907 (USJ), JAD 254 (USJ)	x
Verbesina ovatifolia A. Gray	V/T	JEJ 251 (CR), JEJ 1925 (USJ)	x
Verbesina pallens Benth.	S/T	JEJ 2010 (USJ)	x
Vernonia patens Kunth	S/T	JEJ 147 (USJ)	x
Viguiera cordata (Hook. & Arn.) D'Arcy	S/T	JAD 251 (USJ)	x
Viguiera sylvatica Klatt	S/T	JEJ 355 (CR), JEJ 2019 (USJ)	x
Wamalchitamia aurantiaca (Klatt) Strother	S/T	JEJ 2008 (USJ), JEJ 2036 (USJ), JEJ 2153 (USJ)	
Wedelia acapulcensis Kunth	H/T	JEJ 1998 (USJ), JEJ 2011 (USJ), JEJ 2152 (USJ)	
Wedelia iners (S. F. Blake) Strother	H/T	JEJ 397 (CR)	
Youngia japonica (L.) DC. [IN]	H/T	JEJ 276 (CR)	x
Balanophoraceae			
Helosis cayennensis (Sw.) Spreng.	H/T	JEJ 166 (USJ)	x
Balsaminaceae			
Impatiens walleriana Hook.f. [IN]	H/T	JAD 127 (CR)	x
Begoniaceae			
Begonia hirsuta Aubl.	H/T	JEJ 261 (CR), PJ 478 (USJ)	x
Begonia plebeja Liebm.	H/T	JEJ 368 (CR), JAD 266 (USJ), PJ 479 (USJ)	x
Bignoniaceae			
Amphilophium paniculatum (L.) Kunth	V/T	JEJ 246 (CR), JAD 300 (USJ)	x
Arrabidaea patellifera (Schltdl.) Sandwith	V/T	JEJ 212 (CR), PJ 597 (USJ)	x
Bignonia hyacinthina (Standl.) L.G. Lohmann	V/T	WM 155 (INB)	x
Cydista aequinoctialis (L.) Miers	V/T	JEJ 192 (CR)	x
Dolichandra quadrivalvis (Jacq.) L.G. Lohmann	V/T	WM 145 (INB)	x
Godmania aesculifolia (Kunth) Standl.	T/T	JEJ 195 (CR), JEJ 196 (CR)	x
Handroanthus ochraceus (Cham.) Mattos	T/T	JEJ 2171 (USJ)	x
Macfadyena unguis-cati (L.) A.H. Gentry	V/T	PJ 664 (USJ)	x
Mansoa hymenaea (DC.) A.H. Gentry	V/T	JAD 192 (USJ)	x
Pithecoctenium crucigerum (L.) A.H. Gentry	V/T	JAD 246 (USJ)	x
Pleonotoma variabilis (Jacq.) Miers	V/T	JEJ 128 (USJ), JAD 228 (USJ)	x
Tabebuia rosea (Bertol.) Bertero ex A.DC.	T/T	JAD 191 (USJ)	x
Tecoma stans (L.) Juss. ex Kunth	T/T	JAD 116 (USJ)	x

Continued

Table A1. *Continued.*

Taxa	Life form / Habit	Voucher(s)	Shared with El Rodeo region
Boraginaceae			
Cordia alliodora (Ruiz & Pav.) Oken	T/T	JAD 197 (USJ)	x
Cordia eriostigma Poir.	T/T	JAD 71 (USJ)	x
Cordia panamensis L.Riley	T/T	JEJ 123 (USJ)	x
Ehretia latifolia Loisel. ex A.DC.	T/T	PJ 533 (USJ)	
Heliotropium indicum L.	H/T	JAD 78 (USJ)	
Tournefortia hirsutissima L.	S or V/T	JEJ 180 (USJ), JEJ 200 (CR)	x
Brassicaceae			
Cardamine bonariensis Pers.	H/T	JEJ 279 (CR), JAD 285 (USJ)	x
Lepidium virginicum L. [IN]	H/T	JEJ 1951 (USJ)	
Bromeliaceae			
Bromelia pinguin L.	H/T	JAD 198 (USJ)	x
Catopsis nutans (Sw.) Griseb.	H/Ep	JEJ 1995 (USJ)	x
Pitcairnia maidifolia (Decne. ex C. Morren)	H/T	JAD 313 (USJ), JAD 321 (USJ)	x
Tillandsia brachycaulos Schltdl.	H/Ep	JEJ 2518 (USJ)	x
Tillandsia caput-medusae E. Morren	H/Ep	PJ 498 (USJ)	x
Tillandsia fasciculata Sw.	H/Ep	PJ 495 (USJ)	x
Tillandsia juncea (Ruiz & Pav.) Poir.	H/Ep	JAD 110 (USJ)	
Tillandsia schiedeana Steud.	H/Ep	MAB 4773 (USJ)	x
Burmanniaceae			
Apteria aphylla (Nutt.) Barnhart ex Small*	H/T	PJ 668 (USJ)	
Burseraceae			
Bursera ovalifolia (Schltdl.) Engl.	T/T	PJ 650 (USJ), JEJ 2234 (USJ)	
Bursera simaruba (L.) Sarg.	T/T	JEJ 80 (INB)	x
Cactaceae			
Hylocereus costaricensis (F.A.C.Weber) Britton & Rose	H/Ep	JAD 272 (USJ)	x
Opuntia cochenillifera (L.) Mill. [INN]	S/T	JEJ 2253 (USJ)	
Selenicereus wercklei (F.A.C. Weber) Britton & Rose [E]	H/Ep	JEJ 162 (USJ), PJ 486 (USJ), PJ 523 (USJ)	
Stenocereus aragonii (F.A.C.Weber) Buxb.	S/T	JEJ 2276 (USJ)	
Campanulaceae			
Hippobroma longiflora (L.) G. Don	H/T	JAD 302 (USJ)	x
Lobelia laxyflora Kunth	S/T	JEJ 93 (INB)	x
Lobelia xalapensis Kunth	H/T	JEJ 254 (CR), JEJ 1910 (USJ), JEJ 2045 (USJ)	x
Cannabaceae			
Celtis iguanaea (Jacq.) Sarg.	V/T	JAD 105 (USJ)	x
Celtis schippii Standl.	T/T	JAD 288 (USJ), PJ 616 (USJ)	x
Trema integerrima (Beurl.) Standl.	T/T	JAD 230 (USJ)	x
Trema micrantha (L.) Blume	T/T	JAD 159 (CR), PJ 577 (USJ)	x
Capparaceae			
Capparidastrum frondosum (Jacq.) Cornejo & Iltis	S/T	JAD 124 (USJ), JAD 342 (USJ)	x
Capparidastrum mollicellum (Standl.) Cornejo & Iltis	T/T	JEJ 159 (USJ), JAD 25 (USJ)	
Cynophalla amplissima (Lam.) Iltis & Cornejo	T/T	JAD 65 (USJ)	x
Forchhammeria trifoliata Radlk. ex Millsp.	S/T	JEJ 102 (INB), JEJ 2255 (USJ)	
Quadrella cynophallophora (L.) Hutch.	T/T	JEJ 185 (USJ), PJ 646 (USJ)	x
Quadrella indica (L.) Iltis & Cornejo	S/T	JAD 212 (USJ), ZF 750 (CR,MO)	x
Caprifoliaceae			
Valeriana palmeri A. Gray	H/T	JEJ 1782 (USJ), JEJ 1909 (USJ), JEJ 1940 (USJ)	
Caricaceae			
Carica papaya L.	T/T	PJ 569 (USJ)	x
Vasconcellea cauliflora (Jacq.) A. DC.	S/T	JAD 130 (CR)	x
Caryophyllaceae			
Drymaria cordata (L.) Willd. ex Roem. & Schult.	H/T	JEJ 346 (CR), JAD 286 (USJ)	x
Celastraceae			
Hippocratea volubilis L.	V/T	JAD 229 (USJ)	x
Maytenus segoviarum Standl. & L.O.Williams	S/T	JEJ 90 (INB)	x
Pristimera austin-smithii (Kunth) A.C. Sm.	V/T	JEJ 103 (INB)	
Pristimera celastroides (Kunth) A.C. Sm.	V/T	JEJ 1778 (USJ)	
Zinowiewia integerrima (Turcz.) Turcz.	T/T	JEJ 2176 (USJ)	x
Chrysobalanaceae			
Hirtella racemosa Lam.	S/T	JAD 122 (USJ)	x

Continued

Table A1. *Continued.*

Taxa	Life form / Habit	Voucher(s)	Shared with El Rodeo region
Cleomaceae			
Andinocleome pilosa (Benth.) Iltis & Cochrane	H /T	JEJ 379 (CR), JAD 218 (USJ)	x
Clethraceae			
Clethra lanata M. Martens & Galeotti	T/T	JAD 68 (USJ), JAD 338 (USJ)	x
Clusiaceae			
Garcinia intermedia (Pittier) Hammel	T/T	JAD 86 (USJ), JAD 307 (USJ), PJ 598 (USJ), JAD 339 (USJ)	x
Combretaceae			
Combretum decandrum Jacq.	V/T	PJ 663 (USJ)	
Combretum farinosum Kunth	V/T	JEJ 438 (CR)	
Terminalia oblonga (Ruiz & Pav.) Steud.	T/T	JAD 93 (USJ), PJ 624 (USJ)	
Commelinaceae			
Callisia monandra (Sw.) Schult. & Schult. f.	H/T	PJ 527 (USJ), JAD 221 (USJ), JAD 277 (USJ)	
Commelna diffusa Burm. f.	H/T	JEJ 1912 (USJ)	x
Commelina leiocarpa Benth.	H/T	JAD 234 (USJ), JAD 274 (USJ), PJ 543 (USJ)	x
Dichorisandra amabilis J.R. Grant	S/T	JEJ 201 (CR)	x
Tradescantia poelliae D.R. Hunt	H/T	PJ 465 (USJ), JAD 216 (USJ)	
Tripogandra serrulata (Vahl) Handlos	H/T	JAD 52 (USJ), JEJ 2265 (USJ)	x
Convolvulaceae			
Convolvulus nodiflorus Desr.	V/T	PJ 568 (USJ), PJ 620 (USJ)	x
Ipomoea alba L.	V/T	PJ 661 (USJ), WH 12153 (INB)	
Ipomoea batatas (L.) Lam.	V/T	JEJ 1996 (USJ)	x
Ipomoea hederifolia L.	V/T	PJ 621 (USJ)	x
Ipomoea lindenii M. Martens & Galeotii	V/T	JAD 137 (CR), JEJ 402 (CR), JEJ 1966 (USJ), JAD 252 (USJ)	x
Ipomoea neei (Spreng.) O'Donell	V/T	JEJ 2622.	x
Ipomoea nil (L.) Roth	V/T	JAD 223 (USJ), JEJ 1947 (USJ), WH 8875 (INB,MO)	x
Ipomoea parasitica (Kunth) G. Don	V/T	JEJ 1999 (USJ), WH 12058 (INB)	x
Ipomoea splendor-sylvae House	V/T	JEJ 2018 (USJ), WH 8879 (INB,MO)	x
Ipomoea setosa Ker Gawl.	V/T	JEJ 1939 (USJ), JEJ 1956 (USJ), WH 3625 (CR,MO)	
Ipomoea trifida (Kunth) G. Don	V/T	JEJ 2001 (USJ)	x
Merremia quinquefolia (L.) Hallier f.	V/T	JEJ 2231 (USJ)	x
Costaceae			
Costus speciosus (J. König) Sm. [IN]	H/T	JEJ 405 (CR)	x
Cyperaceae			
Carex polystachya Sw. ex Wahlenb.	H/T	JEJ 2021 (USJ), JEJ 2030 (USJ), JEJ 2150 (USJ)	x
Cyperus aggregatus (Willd.) Endl.	H/T	JEJ 2016 (USJ)	
Cyperus chorisanthos C.B. Clarke	H/T	JEJ 1955 (USJ)	
Cyperus hermaphroditus (Jacq.) Standl.	H/T	PJ 553 (USJ)	
Cyperus laxus Lam.	H/T	JAD 59 (USJ), JEJ 1969 (USJ)	x
Cyperus odoratus L.	H/T	JEJ 2023 (USJ)	x
Cyperus tenerrimus J. Presl & C. Presl	H/T	JEJ 238 (CR)	
Cyperus tenuis Sw.	H/T	JEJ 2135 (USJ)	x
Rhynchospora barbata (Vahl) Kunth*	H/T	JEJ 2031 (USJ)	
Rhynchospora mexicana (Liebm.) Steud.*	H/T	JEJ 2038 (USJ)	
Rhynchospora nervosa (Vahl) Boeck.	H/T	JEJ 2245 (USJ)	x
Scleria tenella Kunth*	H/T	JEJ 2039 (USJ), JEJ 2147 (USJ)	
Cucurbitaceae			
Cayaponia racemosa (Mill.) Cogn.	V/T	PJ 570 (USJ)	x
Gurania makoyana (Lem.) Cogn.	V/T	JEJ 177 (USJ)	x
Melothria pendula L.	V/T	JEJ 349 (CR)	x
Polyclathra cucumerina Bertol.	V/T	PJ 512 (USJ), JAD 239 (USJ)	
Psiguria warscewiczii (Hook. f.) Wunderlin	V/T	JAD 268 (USJ), PJ 648 (USJ)	x
Rytidostylis gracilis Hook. & Arn.	V/T	JAD 237 (USJ)	x
Dilleniaceae			
Davilla kunthii A.St.-Hil.	V/T	JEJ 86 (INB)	
Doliocarpus dentatus (Aubl.) Standl.	V/T	JEJ 87 (INB)	x
Dioscoreaceae			
Dioscorea convolvulacea Schltdl. & Cham.	V/T	JAD 267 (USJ)	x
Dioscorea spiculiflora Hemsl.	V/T	PJ 626 (USJ), JEJ 2178 (USJ)	x
Ebenaceae			
Diospyros acapulcensis Kunth	T/T	JAD 111 (USJ), JEJ 423 (CR)	x

Continued

Table A1. *Continued.*

Taxa	Life form / Habit	Voucher(s)	Shared with El Rodeo region
Diospyros conzattii Standl.	T/T	JAD 108 (USJ), JEJ 2003 (USJ)	
Diospyros digyna Jacq.	T/T	JEJ 193 (CR), JEJ 194 (CR)	x
Elaeocarpaceae			
Sloanea terniflora (Moç. & Sessé ex DC.) Standl.	T/T	JAD 154 (CR), JAD 329 (USJ)	x
Erythroxylaceae			
Erythroxylum macrophyllum Cav.	S/T	JAD 66 (USJ)	
Euphorbiaceae			
Acalypha arvensis Poepp.	H/T	JEJ 270 (CR)	x
Acalypha diversifolia Jacq.	S/T	JEJ 140 (USJ)	x
Acalypha leptopoda Müll. Arg.	S/T	JEJ 141 (USJ), JAD 243 (USJ)	x
Acalypha macrostachya Jacq.	S/T	JEJ 108 (USJ)	x
Bernardia nicaraguensis Standl.	S/T	JEJ 210 (CR)	
Croton draco Schltdl.	T/T	JEJ 78 (INB)	x
Croton niveus Jacq.	S/T	JAD 33 (USJ), PJ 594 (USJ)	
Croton watsonii Standl.	S/T	JEJ 1780 (USJ)	
Croton xalapensis Kunth	S/T	JEJ 136 (USJ)	x
Euphorbia graminea Jacq.	H/T	JEJ 267 (CR)	x
Euphorbia hirta L.	H/T	PJ 557 (USJ), JEJ 1945 (USJ)	x
Euphorbia hoffmanniana (Klotzsch & Garcke) Boiss. [E]	S/T	JEJ 133 (USJ)	
Euphorbia hyssopifolia L.	H/T	PJ 613 (USJ)	x
Euphorbia schlechtendalii Boiss.	S/T	JEJ 353 (CR), JEJ 2268 (USJ)	x
Hura crepitans L.	T/T	JAD 98 (USJ)	x
Ricinus communis L. [IN]	S/T	JEJ 411 (CR)	x
Sapium macrocarpum Müll. Arg.	T/T	JAD 295 (USJ)	x
Tetrorchidium rotundatum Standl.	T/T	JEJ 189 (USJ), JEJ 406 (CR)	x
Tragia volubilis L.	V/T	JEJ 1908 (USJ)	x
Fabaceae			
Acaciella angustissima (Mill.) Britton & Rose	S/T	JEJ 89 (INB), JEJ 417 (CR), PJ 580 (USJ)	x
Aeschynomene americana L.	H/T	JEJ 262 (CR), JEJ 1914 (USJ)	x
Albizia adinocephala (Donn. Sm.) Britton & Rose ex Record	T/T	JAD 153 (CR), JAD 250 (USJ)	x
Caesalpinia pulcherrima (L.) Sw. [INN]	S/T	JEJ 416 (CR)	
Calliandra bijuga Rose	T/T	JEJ 139 (USJ), JEJ 2027 (USJ), JAD 312 (USJ)	x
Canavalia brasiliensis Mart. ex Benth.	V/T	JEJ 2006 (USJ), JEJ 2125 (USJ), JEJ 2126 (USJ), ZF 547 (CR, MO)	x
Centrosema macrocarpum Benth.	V/T	JAD 147 (CR), JAD 257 (USJ), PJ 491 (USJ)	x
Centrosema sagittatum (Humb. & Bonpl. ex Willd.) Brandegee	V/T	JEJ 266 (CR)	x
Chamaecrista nictitans subsp. *disadena* (Steud.) H.S. Irwin & Barneby	H/T	JEJ 224 (CR), PJ 611 (USJ)	x
Chamaecrista nictitans subsp. *patellaria* (DC. ex Collad.) H.S. Irwin & Barneby	H/T	JEJ 260 (CR)	x
Chamaecrista rotundifolia (Pers.) Greene	H/T	JEJ 1934 (USJ)	x
Clitoria falcata Lam.*	V/T	JEJ 248 (CR)	x
Crotalaria maypurensis Kunth	S/T	JEJ 222 (CR), PJ 572 (USJ)	
Crotalaria sagittalis L.	H/T	JEJ 225 (CR)	x
Dalbergia glabra (Mill.) Standl.*	V/T	JEJ 452 (CR)	
Desmodium adscendens (Sw.) DC.	H/T	JEJ 281 (CR)	
Desmodium barbatum (L.) Benth.	H/T	JEJ 1924 (USJ), ZF 545 (CR,MO)	x
Desmodium distortum (Aubl.) J.F. Macbr.	S/T	JEJ 395 (CR), JEJ 1976 (USJ)	x
Desmodium triflorum (L.) DC.	H/T	JEJ 1920 (USJ)	x
Desmodium uncinatum (Jacq.) DC.	B/T	JEJ 1988 (USJ)	
Diphysa americana (Mill.) M.Sousa	T/T	PJ 579 (USJ), JAD 182 (CR)	x
Enterolobium cyclocarpum (Jacq.) Griseb.	T/T	JAD 46 (USJ)	x
Eriosema diffusum (Kunth.) G. Don.	H/T	JEJ 376 (CR), JEJ 2040 (USJ)	
Erythrina berteroana Urb. [NI]	T/T	JAD 30 (USJ)	
Galactia striata (Jacq.) Urb.	V/T	JAD 187 (CR), JEJ 258 (CR), JAD 275 (USJ), PJ 529 (USJ)	x
Gliricidia sepium (Jacq.) Walp. [NI]	T/T	PJ 507 (USJ), JAD 240 (USJ)	x
Hymenaea courbaril L.	T/T	JAD 140 (CR)	x
Indigofera trita L.f.	S/T	JEJ 1982 (USJ)	x
Inga sp.	T/T	JAD 202 (USJ)	
Inga herrerae N.Zamora [E]	T/T	JEJ 88 (INB)	x
Inga marginata Willd.	T/T	JEJ 91 (INB)	x

Continued

Table A1. *Continued.*

Taxa	Life form / Habit	Voucher(s)	Shared with El Rodeo region
Inga oerstediana Benth.	T/T	JAD 114 (USJ)	x
Inga punctata Willd.	T/T	JEJ 148 (USJ)	x
Leptolobium panamense (Benth.) Sch. Rodr. & A.M.G. Azevedo	T/T	JEJ 2169 (USJ)	x
Lonchocarpus acuminatus (Schltdl.) M. Sousa	T/T	PJ 567 (USJ)	x
Lonchocarpus atropurpureus Benth.	T/T	JAD 162 (CR), JAD 248 (USJ), JEJ 2257 (USJ)	
Lonchocarpus felipei N. Zamora	T/T	JEJ 2170 (USJ)	x
Lonchocarpus haberi M.Sousa [E]	T/T	JEJ 173 (USJ), JAD 209 (USJ), JAD 304 (USJ), PJ 534 (USJ)	
Lonchocarpus parviflorus Benth.	T/T	JEJ 2168 (USJ)	x
Lonchocarpus salvadorensis Pittier	T/T	JAD 170 (CR)	x
Lysiloma divaricatum (Jacq.) J.F.Macbr.	T/T	JAD 115 (USJ)	
Machaerium biovulatum Micheli	T/T	JAD 156 (CR), JEJ 1964 (USJ), JAD 244 (USJ)	x
Machaerium kegelii Meissner	V/T	JEJ 2167 (USJ)	x
Mariosousa centralis (Britton & Rose) Seigler & Ebinger	T/T	JEJ 2140 (USJ), WH 1628 (CR,MO)	
Mimosa albida Mart.	S/T	PJ 542 (USJ), JAD 171 (CR)	x
Mimosa pudica L.	H/T	PJ 551 (USJ), JEJ 275 (CR)	x
Mucuna holtonii (Kuntze) Moldenke	V/T	JEJ 167 (CR), JEJ 168 (USJ)	x
Nissolia fruticosa Jacq.	V/T	JEJ 2013 (USJ), JEJ 2124 (USJ)	x
Ormosia cruenta Rudd	T/T	JEJ 434 (CR)	
Pachyrhizus erosus (L.) Urb.	V/T	JEJ 226 (CR)	
Phaseolus lunatus L.	V/T	JEJ 404 (CR)	
Pterocarpus michelianus N. Zamora	T/T	JEJ 165 (CR)	
Rhynchosia minima (L.) DC.	V/T	JEJ 1921 (USJ)	
Samanea saman (Jacq.) Merr.	T/T	JAD 327 (USJ)	x
Senegalia tenuifolia (L.) Britton & Rose	V/T	JAD 121, PJ 581 (USJ)	x
Senna cobanensis (Britton & Rose) H. S. Irwin & Barneby	S/T	WH 12283 (INB,MO)	
Senna hayesiana (Britton & Rose) H.S. Irwin & Barneby	S/T	JEJ 85 (INB)	x
Senna hirsuta (L.) H. S. Irwin & Barneby	S/T	PJ 530 (USJ), WH 12282 (INB)	x
Senna nicaraguensis (Benth.) H.S.Irwin & Barneby	T/T	JEJ 187 (USJ)	
Senna obtusifolia (L.) H.S. Irwin & Barneby	S/T	JEJ 1917 (USJ)	
Senna pallida (Vahl) H.S.Irwin & Barneby	S/T	JEJ 112 (USJ), PJ 573 (USJ)	
Senna papillosa (Britton & Rose) H.S. Irwin & Barneby	T/T	JAD 206 (USJ)	
Senna reticulata (Willd.) H.S.Irwin & Barneby	S /T	JEJ 421 (CR)	
Stylosanthes humilis Kunth.	H/T	JEJ 409 (CR)	
Teramnus uncinatus (L.) Sw.	V/T	JEJ 250 (CR)	x
Vigna speciosa (Kunth) Verdc.	V/T	JEJ 223 (CR)	x
Vigna truxillensis (Kunth) N. Zamora	V/T	JEJ 2041 (USJ), PJ 578 (USJ)	
Zapoteca formosa (Kunth) H.M.Hern.	S/T	PJ 494 (USJ), JEJ 109 (USJ), JAD 276 (USJ)	
Zornia reticulata Sm.	H/T	JEJ 398 (CR), PJ 560 (USJ)	x
Gentianaceae			
Lisianthius seemannii (Griseb.) Kuntze	H/T	JEJ 259 (CR), PJ 588 (USJ)	x
Schultesia lisianthoides (Griseb.) Benth. & Hook. f. ex Hemsl.	H/T	JEJ 382 (CR), JAD 236 (USJ)	x
Gesneriaceae			
Achimenes longiflora DC.	H/T	ZF 478 (CR,MO)	x
Gloxinia erinoides (DC.) Roalson & Boggan	H/T	PJ 559 (USJ), JEJ 142 (USJ), JEJ 1926 (USJ)	x
Kohleria tubiflora (Cav.) Hanst.	H/T	JEJ 208 (CR)	x
Haemodoraceae			
Xiphidium caeruleum Aubl.	H/T	PJ 482 (USJ), JAD 152 (CR), JAD 265 (USJ)	x
Heliconiaceae			
Heliconia latispatha Benth.	H/T	JEJ 415 (CR)	x
Hernandiaceae			
Gyrocarpus jatrophifolius Domin	T/T	JAD 60 (USJ), PJ 617 (USJ)	x
Hydrophyllaceae			
Wigandia urens (Ruiz & Pav.) Kunth	S/T	JAD 284 (USJ)	x
Hypericaceae			
Vismia baccifera (L.) Planch. & Triana	T/T	JAD 73 (USJ)	x
Hypoxidaceae			
Hypoxis decumbens L.	H/T	JEJ 2246 (USJ)	
Lamiaceae			
Aegiphila valerioi Standl.	T/T	JAD 308 (USJ)	
Asterohyptis mociniana (Benth.) Epling	S/T	JEJ 1978 (USJ), WH 12284 (INB)	x

Continued

Table A1. *Continued.*

Taxa	Life form / Habit	Voucher(s)	Shared with El Rodeo region
Cornutia pyramidata L.	T/T	JAD 83 (USJ)	
Hyptis brachiata Briq.	H /T	JEJ 2034 (USJ)	x
Hyptis capitata Jacq.	H /T	PJ 466 (USJ), JEJ 400 (CR)	x
Hyptis lantanifolia Poit.*	H/T	JEJ 217 (CR)	x
Hyptis pectinata (L.) Poit.	H /T	JEJ 386 (CR), PJ 544 (USJ)	x
Hyptis suaveolens (L.) Poit.	H /T	JEJ 252 (CR)	x
Marsypianthes chamaedrys (Vahl) Kuntze	H/T	JEJ 272 (CR)	x
Salvia costaricensis Oerst.	H/T	JEJ 361 (CR)	x
Salvia lasiocephala Hook. & Arn.	H/T	JEJ 1972 (USJ)	x
Salvia occidentalis Sw.	H/T	JEJ 255 (CR)	x
Salvia polystachia Cav.	S/T	JEJ 356 (CR), JEJ 2025 (USJ)	x
Lauraceae			
Beilschmiedia brenesii C.K. Allen	T/T	JEJ 170 (USJ)	x
Cinnamomum brenesii (Standl.) Koesterm.	T/T	PJ 640 (USJ), JAD 348 (USJ)	x
Nectandra martinicensis Mez	T/T	PJ 500 (USJ), WM 135 (INB)	x
Nectandra salicina C.K. Allen	T/T	JEJ 169 (USJ)	
Ocotea hartshorniana Hammel	T/T	JEJ 2238 (USJ)	
Ocotea sinuata (Mez) Rohwer	T/T	JAD 90 (USJ)	x
Ocotea veraguensis (Meisn.) Mez	T/T	JAD 74 (USJ), JEJ 394 (CR)	x
Persea americana Mill. [INN]	T/T	JAD 292 (USJ)	x
Persea caerulea (Ruiz & Pav.) Mez	T/T	JAD 293 (USJ)	x
Loasaceae			
Klaprothia fasciculata (C. Presl) Poston	H/T	JEJ 1936 (USJ)	x
Loganiaceae			
Mitreola petiolata (Walter ex J.F. Gmel.) Torr. & A. Gray	H/T	JEJ 1952 (USJ)	x
Loranthaceae			
Passovia pyrifolia (Kunth) Tiegh.	S/Ep	JEJ 283 (CR)	
Passovia stelis (L.) Kuijt	S/Ep	JEJ 388 (CR)	
Struthanthus cassythoides Millsp. ex Standl.	S/Ep	ZF 749 (CR,MO)	
Struthanthus orbicularis (Kunth) Blume	S/Ep	JEJ 282 (CR), JAD 283 (USJ)	
Lythraceae			
Cuphea carthagenensis (Jacq.) J.F. Macbr.	H/T	JEJ 1923 (USJ)	x
Malpighiaceae			
Banisteriopsis muricata (Cav.) Cuatrec.	V/T	JEJ 407 (CR)	x
Bunchosia polystachia (Andrews) DC.	T/T	JAD 129 (CR), JAD 262 (USJ)	x
Byrsonima crassifolia (L.) Kunth	T/T	JEJ 135 (USJ)	x
Gaudichaudia hexandra (Nied.) Chodat	V/T	PJ 545 (USJ)	x
Heteropterys brachiata Juss.	V/T	JEJ 209 (CR), JAD 324 (USJ)	
Heteropterys hammeli W.R. Anderson [E]	V/T	JEJ 130 (USJ)	
Heteropterys laurifolia (L.) A. Juss.	V/T	JEJ 2180 (USJ)	x
Hiraea reclinata Jacq.	V/T	JEJ 182 (USJ)	x
Hiraea smilacina Standl.	V/T	JAD 245 (USJ)	x
Malpighia albiflora (Cuatrec.) Cuatrec.	T/T	PJ 461 (USJ)	
Malpighia glabra L.	S/T	JEJ 134 (USJ), JEJ 1979 (USJ)	x
Mascagnia divaricata (Kunth) Nied.	V/T	JEJ 129 (USJ)	x
Stigmaphyllon ellipticum (Kunth) A.Juss.	V/T	JEJ 184 (USJ), JEJ 408 (CR)	x
Tetrapterys schiedeana Schltdl. & Cham.	V/T	JEJ 363 (USJ)	x
Tetrapterys tinifolia Triana & Planch.	V/T	JEJ 2004 (USJ), JEJ 2005 (USJ)	
Malvaceae			
Allosidastrum pyramidatum (Cav.) Krapov., Fryxell & D.M. Bates	S/T	JEJ 369 (CR)	x
Apeiba tibourbou Aubl.	T/T	JAD 80 (USJ)	x
Ceiba aesculifolia (Kunth) Britten & Baker f.	T/T	JAD 49 (USJ), PJ 666 (USJ), JAD 330 (USJ)	
Ceiba pentandra (L.) Gaertn.	T/T	JAD 318 (USJ)	x
Guazuma ulmifolia Lam.	T/T	JEJ 92 (INB)	x
Heliocarpus appendiculatus Turcz.	T/T	JAD 354 (USJ)	x
Luehea seemannii Triana & Planch	T/T	JAD 317 (USJ), WM 147 (INB)	
Luehea speciosa Willd.	T/T	JAD (USJ)	x
Malvastrum coromandelianum (L.) Garcke*	H/T	JEJ 1954 (USJ)	
Malvaviscus arboreus Cav.	S/T	JAD 76 (USJ)	x
Melochia lupulina Sw.	S/T	JEJ 1950 (USJ)	

Continued

Table A1. *Continued.*

Taxa	Life form / Habit	Voucher(s)	Shared with El Rodeo region
Melochia nodiflora Sw.	S/T	JAD 145 (CR)	
Melochia nudiflora Standl. & L.O. Williams*	S/T	JEJ 158 (USJ), JEJ 359 (CR), PJ 614 (USJ)	
Ochroma pyramidale (Cav. ex Lam.) Urb.	T/T	JEJ 151 (USJ)	x
Pachira quinata (Jacq.) W.S.Alverson	T/T	PJ 571 (USJ)	x
Pavonia schiedeana Steud.	S/T	JEJ 126 (USJ)	x
Quararibea funebris (La Llave) Vischer	T/T	JAD 264 (USJ)	
Sida hirsutissima Mill.	H/T	JAD 172 (CR), JAD 238 (USJ)	x
Sida hyssopifolia C. Presl.	H/T	JAD 184 (CR), JEJ 1913 (USJ)	
Triumfetta calderonii Standl.	S/T	JEJ 120 (USJ), JEJ 2017 (USJ), PJ 619 (USJ)	
Triumfetta lappula L.	S/T	JAD 34 (USJ), JEJ 1918 (USJ), JEJ 1963 (USJ)	x
Waltheria indica L.	S/T	JEJ 164 (USJ)	
Maranthaceae			
Calathea macrosepala K. Schum.	H/T	JEJ 220 (CR)	x
Marcgraviaceae			
Souroubea venosa Schery	V/T	JAD 314 (USJ), JEJ 2267 (USJ)	x
Melastomataceae			
Arthrostemma ciliatum Pav. ex D. Don,	H/T	JAD 351 (USJ)	
Clidemia octona (Bonpl.) L.O. Williams	S/T	JEJ 249 (CR)	x
Clidemia sericea D. Don	S/T	JAD 146 (CR), PJ 582 (USJ)	x
Conostegia subcrustulata (Beurl.) Triana	S/T	JAD 38 (USJ)	x
Conostegia xalapensis (Bonpl.) D. Don ex DC.	T/T	JAD 79 (USJ)	x
Miconia albicans (Sw.) Steud.	S/T	JEJ 125 (USJ)	x
Miconia argentea (Sw.) DC.	T/T	JAD 106 (USJ)	x
Miconia prasina (Sw.) DC.	T/T	JAD 315 (USJ)	x
Schwackaea cupheoides (Benth.) Cogn.	H/T	JEJ 350 (CR), JAD 235 (USJ)	x
Tibouchina longifolia (Vahl) Baill.	H/T	JAD 188 (CR), JEJ 265 (CR), JEJ 1962 (USJ)	x
Meliaceae			
Cedrela odorata L.	T/T	JAD 84 (USJ)	x
Cedrela salvadorensis Standl.	T/T	JEJ 284 (CR), JEJ 1933 (USJ)	x
Guarea excelsa Kunth	T/T	JEJ 1774 (USJ)	x
Guarea williamsii C. DC.	T/T	JEJ 154 (USJ)	x
Trichilia americana (Sessé & Moc.) T.D. Penn.	T/T	JAD 77 (USJ), PJ 584 (USJ)	x
Trichilia glabra L.	T/T	JAD 259 (USJ)	x
Trichilia havanensis Jacq.	T/T	JEJ 114 (USJ)	x
Trichilia martiana C.DC.	T/T	JAD 134 (CR), JAD 347 (USJ)	x
Trichilia pleeana (A.Juss.) C.DC.	T/T	PJ 462 (USJ), JAD 211 (USJ)	
Menispermaceae			
Cissampelos pareira L.	V/T	JEJ 116 (USJ), PJ 541 (USJ)	x
Hyperbaena tonduzii Diels	T/T	JEJ 1776 (USJ), JAD 326 (USJ)	
Moraceae			
Brosimum alicastrum Sw.	T/T	JAD 149 (CR)	x
Clarisia biflora Ruiz & Pav.	T/T	PJ 647 (USJ), WM 148 (INB)	x
Dorstenia contrajerva L.	H/T	JEJ 82 (INB)	x
Ficus citrifolia Mill.	T/Hep	JEJ 181 (USJ)	x
Ficus costaricana (Liebm.) Miq.	T/Hep	JAD 63 (USJ)	x
Ficus jimenezii Standl.	T/Hep	JEJ 1980 (USJ)	x
Ficus morazaniana W.C.Burger	T/Hep	JAD 195 (USJ)	x
Ficus obtusifolia Kunth	T/Hep	JEJ 179 (USJ)	x
Ficus pertusa L.f.	T/Hep	JAD 225 (USJ)	x
Ficus trachelosyce Dugand	T/T	JEJ 183 (USJ)	x
Ficus yoponensis	T/T	JAD 85 (USJ), JAD 226 (USJ), PJ 510 (USJ)	x
Maclura tinctoria (L.) D.Don ex Steud.	T/T	PJ 547 (USJ), JAD 194 (USJ), EB 19 (CR,MO)	x
Pseudolmedia glabrata (Liebm.) C.C. Berg	T/T	JEJ 190 (CR)	x
Sorocea trophoides W.C. Burger	T/T	JAD 336 (USJ)	x
Trophis racemosa (L.) Urb.	T/T	JAD 200 (USJ), WH 11330 (CR,MO)	x
Muntingiaceae			
Muntingia calabura L.	T/T	JEJ 1987 (USJ)	x
Myricaceae			
Morella cerifera (L.) Small	S/T	JAD 75 (USJ)	

Continued

Table A1. *Continued.*

Taxa	Life form / Habit	Voucher(s)	Shared with El Rodeo region
Myrtaceae			
Calyptranthes pallens Griseb.	T/T	PJ 609 (USJ), WM 152 (INB)	
Eugenia galalonensis (C. Wright ex Griseb.) Krug & Urb.	T/T	PJ 552 (USJ)	x
Eugenia hiraeifolia Standl.	T/T	JAD 94 (USJ)	x
Eugenia hypargyrea Standl.*	S/T	JEJ 145 (USJ)	
Eugenia oerstediana O. Berg	T/T	PJ 660 (USJ)	x
Eugenia tilarana Barrie [E]	T/T	EB 117 (CR,MO)	
Myrcia splendens (Sw.) DC.	T/T	PJ 658 (USJ)	x
Myrcianthes fragrans (Sw.) McVaugh	T/T	PJ 610 (USJ)	
Psidium guajava L.	T/T	JEJ 113 (USJ)	x
Psidium guineense Sw.	S/T	PJ 596 (USJ)	x
Psidium sartorianum (O.Berg) Nied.	T/T	JEJ 1781 (USJ)	x
Syzygium jambos (L.) Alston [IN]	T/T	PJ 657 (USJ)	x
Nyctaginaceae			
Bougainvillea glabra Choisy [INN]	S/T	JAD 333 (USJ)	
Guapira costaricana (Standl.) Woodson	T/T	JAD 104 (USJ)	x
Mirabilis jalapa L.	T/T	PJ 515 (USJ), JAD 126 (CR)	
Mirabilis violacea (L.) Heimerl	H/T	JAD 54 (USJ)	x
Pisonia aculeata L.	S/T	JEJ 2254 (USJ)	x
Pisonia silvatica Standl.	S/T	JAD 168 (CR), JAD 310 (USJ)	
Ochnaceae			
Ouratea lucens (Kunth) Engl.	S/T	JAD 100 (USJ)	
Sauvagesia pulchella Planch. ex Seem.	H/T	PJ 593 (USJ)	x
Onagraceae			
Hauya elegans DC.	T/T	JEJ 227 (CR), PJ 635 (USJ)	x
Ludwigia octovalvis (Jacq.) P.H. Raven	S/T or Aq	JAD 136 (CR), JEJ 1944 (USJ)	x
Opiliaceae			
Agonandra macrocarpa L.O. Williams*	T/T	JEJ 153 (USJ)	
Orchidaceae			
Barkeria obovata (C. Presl) Christenson	H/Ep	JEJ 450 (CR), PJ 652 (USJ)	
Bletia purpurea (Lam.) DC.	H/T	PJ 628 (USJ), PJ 630 (USJ)	x
Camaridium neglectum (Schltr.) M.A. Blanco	H/Ep	PJ 651 (USJ)	
Corymborkis forcipigera (Rchb. f. & Warsz.) L.O. Williams	H/T	JEJ 2181 (USJ)	
Dichaea panamensis Lindl.	H/Ep	JEJ 107 (USJ)	
Epidendrum barbeyanum Kraenzl.	H/Ep	JEJ 2277 (USJ)	
Epidendrum glumibracteum Rchb.f.	H/Ep	JEJ 137 (USJ), JEJ 2026 (USJ)	
Epidendrum oerstedii Rchb. f.	H/Ep	ZF 733 (CR,MO)	
Govenia sp.	H/T	JEJ 1997 (USJ)	
Guarianthe skinneri (Bateman) Dressler & W.E. Higgins	H/Ep	JEJ 2269 (USJ)	
Liparis elata Lindl.	H/T	PJ 631 (USJ)	x
Mormodes salazarii M.A. Blanco, J.E. Jiménez & P. Juárez*[E] (Blanco et al. in press)	H/Ep	MAB 4749 (USJ), JEJ 2263 (USJ)	
Oeceoclades maculata (Lindl.) Lindl. [IN]	H/T	JAD 102 (USJ), JAD 131 (USJ)	x
Oncidium stenobulbon Kraenzl.	H/Ep	PJ 601 (USJ)	x
Polystachya foliosa (Hook.) Rchb. f.	H/Ep	PJ 600 (USJ)	x
Prosthechea cochleata (L.) W.E. Higgins	H/Ep	MAB 4747 (USJ)	x
Sarcoglottis hunteriana Schltr.	H/T	JAD 67 (USJ)	
Scaphyglottis micrantha (Lindl.) Ames & Correll	H/Ep	JAD 41 (USJ), JAD 334 (USJ)	x
Sobralia decora Bateman	H/T or Ep	PJ 585 (USJ), PJ 602 (USJ), JEJ 2266 (USJ)	
Specklinia grobyi (Bateman ex Lindl.) F. Barros	H/Ep	PJ 505 (USJ), WH 11754 (CR,MO)	x
Stelis quadrifida (Lex.) Solano & Soto Arenas	H/Ep	PJ 599 (USJ)	x
Vanilla pompona Schiede*	V/T	JAD 142 (CR)	
Oxalidaceae			
Oxalis corniculata L.	H/T	JEJ 418 (CR)	
Oxalis frutescens L.	H/T	JAD 118 (USJ), PJ 562 (USJ)	x
Papaveraceae			
Bocconia frutescens L.	S/T	JAD 61 (USJ)	x
Passifloraceae			
Passiflora biflora Lam.	V/T	JEJ 84 (INB)	x
Passiflora foetida L.	V/T	JEJ 1932 (USJ)	

Continued

Table A1. *Continued.*

Taxa	Life form / Habit	Voucher(s)	Shared with El Rodeo region
Passiflora platyloba Killip	V/T	PJ 629 (USJ)	x
Phrymaceae			
Leucocarpus perfoliatus (Kunth) Benth.	H/T	ZF 752 (CR,MO)	
Phyllanthaceae			
Margaritaria nobilis L. f.	T/T	PJ 587 (USJ), EB 25 (CR,MO)	
Phyllanthus anisolobus Müll. Arg.	S/T	JEJ 2172 (USJ)	
Phyllanthus niruri L.	H/T	JEJ 1983 (USJ)	
Phytolaccaceae			
Petiveria alliacea L.	S/T	JEJ 160 (USJ), JEJ 161 (USJ), PJ 464 (USJ)	x
Phytolacca icosandra L.	S/T	JEJ 98 (INB), JEJ 1915 (USJ)	x
Rivina humilis L.	S/T	JAD 109 (USJ), PJ 536 (USJ)	x
Trichostigma octandrum (L.) H.Walter	S/T	JAD 169 (CR), JAD 174 (CR), JEJ 2270 (USJ)	x
Picramniaceae			
Picramnia antidesma Sw.	S/T	JAD 99 (USJ)	x
Piperaceae			
Peperomia cyclophylla Miq.	H/Ep	JEJ 2259 (USJ)	x
Peperomia lanceolatopeltata C. DC.	H/T	JEJ 211 (CR), PJ 517 (USJ)	
Peperomia macrostachyos (Vahl) A. Dietr.	H/Ep	JEJ 412 (CR), JAD 219 (USJ), PJ 504 (USJ)	x
Piper aduncum L.	S/T	JAD 205 (USJ)	x
Piper aequale Vahl	S/T	JAD 178 (CR)	x
Piper artanthopse C. DC.	S/T	JEJ 391 (CR)	x
Piper auritum Kunth	S/T	JAD 101 (USJ)	x
Piper chrysostachyum C. DC.	S/T	JEJ 228 (CR)	x
Piper friedrichtalli C. DC.	S/T	JEJ 1981 (USJ)	
Piper guanacostense C. DC.	S/T	JEJ 231 (CR)	x
Piper hispidum Sw.	S/T	PJ 632 (USJ)	x
Piper marginatum Jacq.	S/T	PJ 476 (USJ), JEJ 204 (CR)	x
Piper obliquum Ruiz & Pav.	S/T	JEJ 230 (CR)	
Piper pseudofuligineum C. DC.	S/T	JEJ 229 (CR)	x
Piper pseudolindenii C. DC.	S/T	JEJ 374 (CR), JAD 346 (USJ)	x
Piper schiedeanum Steud.	S/T	JAD 179 (CR)	x
Piper umbellatum L.	S/T	JAD 150 (CR), PJ 519 (USJ)	x
Piper yucatanense C. DC.	S/T	JAD 180 (CR), JAD 256 (USJ), PJ 503 (USJ)	
Poaceae			
Andropogon bicornis L.	H/T	JEJ 2151 (USJ)	x
Anthephora hermaphrodita (L.) Kuntze	H/T	JEJ 2128 (USJ), JEJ 2132 (USJ)	
Arthraxon hispidus (Thunb.) Makino [IN]	H/T	PJ 556 (USJ), WH 12288 (INB,MO)	x
Axonopus aureus P. Beauv.	H/T	JEJ 2038 (USJ), JEJ 2149 (USJ)	x
Bambusa vulgaris Schrad. ex J.C. Wendl. [IN]	H/T	JEJ 2624 (USJ)	
Coix lacrima-jobi L. [IN]	H/T	PJ 489 (USJ), JEJ 119 (USJ)	x
Cynodon nlemfuensis Vanderyst [IN]	H/T	JEJ 3134 (USJ)	x
Digitaria eriantha Steud. [IN]	H/T	JEJ 2130 (USJ)	
Digitaria setigera Roth [IN]	H/T	JEJ 2129 (USJ), JEJ 2139 (USJ)	x
Echinochloa colona (L.) Link	H/T	PJ 565 (USJ), JEJ 2012 (USJ), JEJ 2029 (USJ)	x
Eleusine indica (L.) Gaertn. [IN]	H/T	PJ 550 (USJ), JEJ 2131 (USJ)	x
Eragrostis ciliaris (L.) R. Br. [IN]	H/T	JEJ 1946 (USJ), JEJ 2137 (USJ), WH 9690 (CR,MO)	x
Eragrostis pectinacea (Michx.) Nees	H/T	JEJ 2142 (USJ)	
Hyparrhenia rufa (Nees) Stapf [IN]	H/T	JEJ 403 (CR)	x
Ichnanthus tenuis (J. Presl & C. Presl) Hitchc. & Chase	H/T	JEJ 2148 (USJ)	
Lasiacis oaxacensis (Steud.) Hitchc.	H/T	JEJ 213 (CR), JEJ 2158 (USJ)	x
Lasiacis procerrima (Hack.) Hitchc.	H/T	JEJ 156 (USJ)	x
Lasiacis rhizophora (E. Fourn.) Hitchc.	H/T	JEJ 2156 (USJ), JEJ 2157 (USJ), PJ 537 (USJ)	x
Melinis minutiflora P. Beauv. [IN]	H/T	JEJ 1958 (USJ), JEJ 2020 (USJ), JEJ 2160 (USJ), PJ 555 (USJ)	x
Muhlenbergia diandra (R.W. Pohl) Columbus [E]	H/T	JEJ 1948 (USJ)	
Muhlenbergia lehmanniana Henrard	H/T	JEJ 2028 (USJ)	x
Olyra latifolia L.	H/T	WH 11535 (INB,MO)	x
Oplismenus burmannii (Retz.) P. Beauv.	H/T	PJ 472 (USJ), JEJ 2022 (USJ)	x
Oryza sativa L. [IN]	H/T	JEJ 2141 (USJ)	
Panicum trichoides Sw.	H/T	JEJ 1942 (USJ), WH 12278 (INB,MO), PJ 526 (USJ)	x
Paspalum minus E. Fourn.	H/T	JEJ 2146 (USJ)	x

Continued

Table A1. *Continued.*

Taxa	Life form / Habit	Voucher(s)	Shared with El Rodeo region
Paspalum paniculatum L.	H/T	JAD 165 (CR), PJ 589 (USJ)	x
Paspalum plicatulum Michx.	H/T	JAD 183 (CR)	x
Paspalum saccharoides Nees ex Trin.	H/T	JEJ 2143 (USJ)	x
Pennisetum purpureum Schumach. [IN]	H/T	JEJ 375 (CR)	x
Pennisetum setosum (Sw.) Rich.	H/T	JEJ 1960 (USJ)	x
Rhipidocladum pittieri (Hack.) McClure	H/T	JAD 193 (USJ)	x
Schizachyrium brevifolium (Sw.) Nees ex Büse	H/T	JEJ 2044 (USJ), WH 12289 (INB,MO)	
Sporobolus indicus (L.) R. Br.	H/T	JEJ 2237 (USJ)	x
Podostemaceae			
Tristicha trifaria (Bory ex Willd.) Spreng.	H/Aq	JEJ 2264 (USJ)	
Polemoniaceae			
Loeselia ciliata L.	H/T	JEJ 366 (CR), JEJ 1967 (USJ), JEJ 2012 (USJ), JEJ 2161 (USJ)	x
Loeselia glandulosa (Cav.) G. Don	H/T	JEJ 387 (CR), JEJ 2009 (USJ), PJ 574 (USJ)	x
Polygalaceae			
Polygala asperuloides Kunth	H/T	JEJ 2042 (USJ), JEJ 667 (USJ)	
Polygala paniculata L.	H/T	JAD 173 (CR), JEJ 2043 (USJ)	x
Polygala violacea Aubl.	H/T	PJ 592 (USJ)	x
Securidaca diversifolia (L.) S.F. Blake	V/T	PJ 532 (USJ), JAD 345 (USJ)	x
Polygonaceae			
Coccoloba acapulcensis Standl.	T/T	JEJ 115 (USJ), JAD 208 (USJ), PJ 513 (USJ)	x
Polygonum punctatum Elliott	H/T	JAD 36 (USJ)	
Rumex nepalensis Spreng.	H/T	JEJ 273 (CR)	
Ruprechtia costaricensis Pendry*	T/T	JEJ 1772 (USJ)	
Triplaris melaenodendron (Bertol.) Standl. & Steyerm.	T/T	JEJ 381 (CR)	x
Pontederiaceae			
Heteranthera reniformis Ruiz & Pav.	H/Aq	JEJ 1775 (USJ)	
Portulacaceae			
Portulaca oleracea L.	H/T	JEJ 2243 (USJ)	x
Primulaceae			
Ardisia compressa Kunth	T/T	PJ 637 (USJ)	x
Ardisia paschalis Donn. Sm.	T/T	PJ 457 (USJ)	
Ardisia revoluta Kunth	T/T	JEJ 414 (CR)	x
Myrsine coriacea (Sw.) R.Br. ex Roem. & Schult.	T/T	JAD 203 (USJ)	x
Proteaceae			
Roupala montana Aubl.	S/T	JAD 133 (CR), PJ 638 (USJ)	x
Putranjivaceae			
Drypetes asymmetricarpa G.A. Levin	T/T	EB 35 (INB,MO), EB 58 (INB,MO)	
Drypetes lateriflora (Sw.) Krug & Urb.	T/T	JEJ 163 (USJ), PJ 576 (USJ)	
Ranunculaceae			
Clematis guadeloupae Pers.	V/T	JEJ 280 (CR)	
Rhamnaceae			
Gouania polygama (Jacq) Urb.	V/T	JEJ 247 (CR), JEJ 1949 (USJ)	x
Krugiodendron ferreum (Vahl) Urb.*	T/T	JEJ 175 (USJ), PJ 470 (USJ)	
Rosaceae			
Prunus fortunensis McPherson	T/T	JEJ 1779 (USJ)	
Rubiaceae			
Arachnothryx aspera (Standl.) Borhidi [E]	T/T	JAD 69 (USJ), JEJ 1973 (USJ), JEJ 2127 (USJ), JEJ 2248 (USJ)	x
Augusta rivalis (Benth.) J.H. Kirkbr.	S/T	JEJ 174 (USJ)	
Calycophyllum candidissimum (Vahl) DC.	T/T	PJ 595 (USJ)	x
Chiococca alba (L.) Hitchc.	S/T	JAD 128 (CR)	x
Coccocypselum herbaceum Aubl.	H/T	JEJ 364 (CR)	
Coffea arabica L. (IN)	S/T	JEJ 152 (USJ)	x
Declieuxia fruticosa (Willd. ex Roem. & Schult.) Kuntze	H/T	JAD 161 (CR), JEJ 2035 (USJ)	
Deppea inaequalis Standl. & Steyerm.*	S/T	PJ 520 (USJ), JAD 278 (USJ)	x
Exostema mexicanum A.Gray	T/T	JAD 42 (USJ)	x
Faramea occidentalis (L.) A.Rich.	T/T	JAD 303 (USJ), PJ 575 (USJ)	x
Gonzalagunia panamensis (Cav.) K.Schum.	S/T	JEJ 106 (INB)	x
Guettarda macrosperma C.M.Taylor	T/T	JEJ 1994 (USJ), PJ 540 (USJ)	x
Hamelia patens Jacq.	S/T	JAD 48 (USJ), JAD 141 (CR)	x

Continued

Table A1. *Continued.*

Taxa	Life form / Habit	Voucher(s)	Shared with El Rodeo region
Hamelia xerocarpa Kuntze	T/T	EB 36 (INB,CR,MO), WH 11331 (INB,CR,MO)	x
Ixora floribunda (A. Rich.) Griseb.	T/T	WM 146 (INB)	x
Ladenbergia brenesii Standl.	S/T	WM 151 (INB)	
Mitracarpus hirtus (L.) DC.	H/T	JEJ 1930 (USJ), JAD 281 (USJ)	x
Psychotria deflexa DC.	S/T	JEJ 155 (USJ), PJ 643 (USJ)	x
Psychotria horizontalis Sw.	S/T	JEJ 150 (USJ), JAD 255 (USJ), PJ 522 (USJ)	x
Psychotria nervosa Sw.	S/T	JEJ 157 (USJ)	
Psychotria pubescens Sw.	S/T	JEJ 207 (CR)	x
Psychotria quinqueradiata Pol.	S/T	PJ 531 (USJ)	
Randia armata (Sw.) DC.	T/T	JAD 56 (USJ), JAD 190 (USJ)	
Richardia scabra L.	H/T	PJ 558 (USJ), JEJ 1927 (USJ)	x
Sommera donnell-smithii Standl.	T/T	JAD 214 (USJ), PJ 481 (USJ)	
Spermacoce alata Aubl.	H/T	JAD 167 (CR)	
Spermacoce densiflora (DC.) Liogier	H/T	JAD 164 (CR)	x
Spermacoce remota Lam.	H/T	JEJ 2256 (USJ)	x
Spermacoce suaveolens (G. Mey.) Kuntze	H/T	PJ 591 (USJ)	x
Rutaceae			
Amyris balsamifera L.	T/T	JEJ 99 (INB), JAD 263 (USJ), PJ 485 (USJ)	
Casimiroa sapota Oerst.	T/T	JEJ 383 (CR), JAD 291 (USJ)	x
Citrus aurantiifolia (Christm.) Swingle [IN]	S/T	JAD 28 (USJ), JAD 241 (USJ)	
Citrus aurantium L. [IN]	S/T	JAD 335 (USJ)	x
Zanthoxylum fagara (L.) Sarg.	T/T	JEJ 186 (USJ)	
Zanthoxylum monophyllum (Lam.) P.Wilson	T/T	JEJ 83 (INB)	x
Zanthoxylum rhoifolium Lam.	T/T	JEJ 2179 (USJ)	x
Zanthoxylum setulosum P. Wilson	T/T	JEJ 2166 (USJ), WH 9982 (CR,MO)	x
Salicaceae			
Banara guianensis Aubl.	S/T	WM 139 (INB)	x
Casearia corymbosa Kunth	T/T	JAD 72 (USJ)	x
Casearia stjohnii I.M. Johnst.	T/T	JEJ 104 (INB)	x
Casearia sylvestris Sw.	T/T	PJ 561 (USJ), JAD 135 (CR), JAD 349 (USJ)	x
Prockia crucis P. Browne ex L.	T/T	JAD 322 (USJ)	x
Xylosma flexuosa (Kunth) Hemsl.	S/T	JAD 53 (USJ), JEJ 1985 (USJ)	x
Xylosma intermedia (Seem.) Triana & Planch.	T/T	JEJ 2175 (USJ)	
Santalaceae			
Phoradendron piperoides (Kunth) Trel.	S/Ep	JEJ 396 (CR), JAD 290 (USJ), PJ 612 (USJ)	
Phoradendron quadrangulare (Kunth) Griseb.	S/Ep	JAD 289 (USJ)	x
Sapindaceae			
Allophylus racemosus Sw.	S/T	JAD 64 (USJ), JAD 157 (CR)	x
Billia rosea (Planch. & Linden) C. Ulloa & P. Jørg.	T/T	JAD 37 (USJ)	
Cardiospermum grandiflorum Sw.	V/T	JAD 58 (USJ), JAD 253 (USJ)	x
Cupania glabra Sw.	T/T	JEJ 2174 (USJ)	
Cupania guatemalensis (Turcz.) Radlk.	T/T	JAD 148 (CR), JAD 242 (USJ)	x
Dilodendron elegans (Radlk.) A.H. Gentry & Steyerm.	T/T	JAD 323 (USJ)	x
Exothea paniculata (Juss.) Radlk.	T/T	JEJ 176 (USJ), JEJ 2002 (USJ), PJ 649 (USJ), JAD 316 (USJ)	x
Paullinia cururu L.	V/T	PJ 659 (USJ)	x
Serjania mexicana (L.) Willd.	V/T	JAD 88 (USJ)	
Serjania racemosa Schumach.	V/T	JAD 341 (USJ)	
Serjania rhombea Radlk.	V/T	JEJ 264 (CR)	x
Serjania triquetra Radlk.	V/T	PJ 622 (USJ), JEJ 393 (CR), JAD 340 (USJ)	
Thouinidium decandrum (Bonpl.) Radlk.	T/T	JEJ 138 (USJ), JAD 355 (USJ)	x
Sapotaceae			
Chrysophyllum brenesii Cronquist	T/T	JAD 343 (USJ)	x
Chrysophyllum cainito L. [IN]	T/T	PJ 590 (USJ)	x
Manilkara chicle (Pittier) Gilly	T/T	PJ 664 (USJ)	x
Pouteria reticulata (Engl.) Eyma	T/T	JEJ 149 (USJ)	x
Sideroxylon capiri (A.DC.) Pittier	T/T	JAD 119 (USJ)	x
Scrophulariaceae			
Buchnera pusilla Kunth	H/T	JEJ 1928 (USJ)	x
Buddleja americana L.	S/T	JEJ 1990 (USJ)	
Castilleja arvensis Schltdl. & Cham.	H/T	JEJ 352 (CR)	

Continued

Table A1. *Continued.*

Taxa	Life form / Habit	Voucher(s)	Shared with El Rodeo region
Lamourouxia viscosa Kunth.	S/T	JEJ 206 (CR), JEJ 413 (CR), PJ 548 (USJ), PJ 583 (USJ)	x
Mazus pumilus (Burm. f.) Steenis [IN]	H/T	JEJ 263 (CR)	x
Russelia sarmentosa Jacq.	H/T	JAD 62 (USJ)	x
Scoparia dulcis L.	H/T	JEJ 117 (USJ), JEJ 420 (CR)	x
Stemodia verticillata (Mill.) Hassl.	H/T	JEJ 2250 (USJ)	
Smilacaceae			
Smilax spinosa Mill.	V/T	JEJ 365 (CR), JEJ 1965 (USJ)	
Solanaceae			
Acnistus arborescens (L.) Schltdl.	T/T	JEJ 96 (INB), JEJ 2252 (USJ)	x
Browallia americana L.	H/T	JEJ 274 (CR)	x
Cestrum sp. A. (*sensu* Bohs 2015)	S/T	JEJ 131 (INB), JAD 271 (USJ), PJ 458 (USJ)	x
Cestrum tomentosum L.f.	S/T	JAD 120 (USJ), JEJ 357 (CR), JAD 337 (USJ)	x
Jaltomata repandidentata (Dunal) Hunz.	S/T	JAD 40 (USJ), WH 11853 (INB,MO)	
Juanulloa mexicana (Schltdl.) Miers	S/Hep	JEJ 172 (USJ)	x
Lycianthes acapulcensis (Baill.) D'Arcy	S/T	JEJ 233 (CR), JAD 210 (USJ), PJ 502 (USJ)	
Physalis pubescens L.	S/T	JAD 125 (CR)	
Schwenckia americana D. Royen ex L.*	H/T	JEJ 2046 (USJ), JEJ 2159 (USJ)	
Solanum americanum Mill.	H/T	JEJ 124 (USJ), JAD 282 (USJ)	x
Solanum candidum Lindl.	S/T	PJ 625 (USJ)	x
Solanum capsicoides All. [IN]	S/T	JEJ 1943 (USJ)	x
Solanum rovirosanum Donn. Sm.	S/T	JEJ 188 (USJ)	x
Solanum rudepannum Dunal	S/T	JEJ 191 (CR)	
Solanum schlechtendalianum Walp.	T/T	JAD 325 (USJ)	x
Witheringia meiantha (Donn. Sm.) Hunz.	S/T	JAD 81 (USJ)	
Staphyllaceae			
Turpinia occidentalis (Sw.) G. Don	T/T	JEJ 2669 (USJ)	x
Styracaceae			
Styrax argenteus C. Presl.	T/T	JAD 344 (USJ)	
Symplocaceae			
Symplocos tribracteolata Almeda [E]	T/T	JEJ 436 (CR)	
Thymelaeaceae			
Daphnopsis americana (Mill.) J.R.Johnst.	T/T	JAD 89 (USJ), JAD 294 (USJ)	
Tovariaceae			
Tovaria pendula Ruiz & Pav.	S/T	JAD 39 (USJ)	
Turneraceae			
Erblichia odorata Seem.	T/T	JEJ 360 (CR)	
Ulmaceae			
Ulmus mexicana (Liebm.) Planch.	T/T	JAD 199 (USJ)	
Urticaceae			
Boehmeria ramiflora Jacq.	S/T	PJ 480 (USJ)	
Cecropia obtusifolia Bertol.	T/T	PJ 645 (USJ)	x
Cecropia peltata L.	T/T	JAD 113 (USJ)	x
Discocnide mexicana (Liebm.) Chew	T/T	JEJ 81 (INB), JEJ 2271 (USJ)	
Myriocarpa bifurca Liebm.	S /T	JEJ 202 (CR), JEJ 390 (CR), PJ 511 (USJ)	x
Myriocarpa longipes Liebm.	S /T	JAD 273 (USJ)	x
Phenax hirtus (Sw.) Wedd.	S/T	JEJ 1970 (USJ)	
Phenax mexicanus Wedd.	S/T	JAD 35 (USJ), JEJ 1922 (USJ)	
Pilea hyalina Fenzl	H/T	JAD 163 (CR), JEJ 1992 (USJ)	x
Pilea microphylla (L.) Liebm.	H/T	JEJ 2244 (USJ)	
Urera baccifera (L.) Gaudich.	T/T	JEJ 2274 (USJ)	x
Urera caracasana (Jacq.) Gaudich. ex Griseb.	T/T	JAD 204 (USJ), PJ 521 (USJ)	x
Verbenaceae			
Citharexylum donnell-smithii Greenm.	T/T	WM 154 (INB)	
Lantana camara L.	S/T	JAD 70 (USJ)	x
Lippia alba (Mill.) N.E.Br. ex Britton & P.Wilson	S/T	JAD 97 (USJ)	
Lippia cardiostegia Benth.	S/T	JAD 112 (USJ), JEJ 235 (CR), PJ 586 (USJ)	x
Petrea volubilis L.	V/T	JEJ 118 (USJ)	x
Stachytarpheta frantzii Pol.	S/T	JAD 57 (USJ)	x
Verbena litoralis Kunth.	H/T	JEJ 79 (INB), JEJ 232 (CR)	x

Continued

Table A1. *Continued.*

Taxa	Life form / Habit	Voucher(s)	Shared with El Rodeo region
Violaceae			
Hybanthus mexicanus Ging. ex DC.	S/T	JEJ 435 (CR), PJ 528 (USJ)	
Vitaceae			
Cissus alata Jacq.	V/T	JAD 155 (CR), JEJ 1968 (USJ)	x
Cissus verticillata (L.) Nicolson & C.E.Jarvis	V/T	JAD 138 (CR), JEJ 1931 (USJ), JEJ 1993 (USJ)	x
Vitis tiliifolia Humb. & Bonpl. ex Schult.	V/T	JEJ 122 (USJ), JEJ 1974 (USJ), JAD 246 (USJ)	x
Zingiberaceae			
Hedychium coronarium J.König [IN]	H/T	JAD 320 (USJ)	